

# Characteristics of Recent Science and Engineering Graduates: 1999

Detailed Statistical Tables

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**National Science Foundation**

May 2003

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**Suggested Citation**

National Science Foundation, Division of Science Resources Statistics, *Characteristics of Recent Science and Engineering Graduates: 1999*, NSF 03-319, Project Officer, John Tsapogas (Arlington, VA 2003).

May 2003

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# ACKNOWLEDGMENTS

John Tsapogas of the Division of Science Resources Statistics (SRS) of the National Science Foundation had overall responsibility for conducting the survey and producing this report. Mary Collins of Westat was the study director, and Lucinda Gray of Westat was the associate director.

Ronald Fecso, Chief Statistician of SRS and J. Michael Brick of Westat provided valuable statistical advice that greatly enhanced the accuracy of the estimates presented in this report. Comments, reviews, and consultations were provided by Mary Golladay, Program Director of the Human Resources Statistics Program, SRS; and Mary Frase, Deputy Director, SRS. Tanya R.

Gore and Rolfe W. Larson of the Information and Technology Services Program (ITSP) of SRS provided editing, processing, and final composition for this report. John R. Gawalt, Program Director of the ITSP, and his Web team handled electronic publication.

The National Science Foundation (NSF) expresses its appreciation to the recent graduates who contributed their time by responding to this survey. NSF also extends its sincere appreciation to college administrators and other college officials who contributed their time and effort to this survey; their willingness to participate in the survey greatly enhanced the quality of this report.



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# GENERAL NOTES

This report presents data on the characteristics of men and women who received a bachelor's or master's degree in a science or engineering field from U.S. academic institutions during the 1996–97 (1997) and 1997–98 (1998) academic years. The data were collected in 1999 and 2000 and reflect the status of individuals as of April 1999. In addition to the demographic characteristics of recent college graduates with science and engineering (S&E) degrees, the data may be used to understand the employment experiences of recent S&E graduates, such as the extent to which recent graduates entered the labor force, whether they were able to find employment, and the attributes of that employment.

Results of this survey are presented separately for bachelor's and master's degree recipients; complementary tables for the two degree levels are found on facing pages throughout the report.

This report contains three sections. The technical notes in section A contain information on survey

methodology, coverage, concepts, definitions, and sampling errors. Detailed tabulations from the survey are presented in section B. Within section B, tables are grouped by topics, such as demographic characteristics, employment characteristics, and so on. Although data were collected using both computer-assisted telephone interviewing (CATI) and mail questionnaires, we have only included a copy of the mail questionnaire in section C.

The Division of Science Resources Statistics also produces reports that present data on degree completions in science and engineering. The data presented in this report measure the number of individuals with recently acquired science and engineering degrees and do not necessarily coincide with the data on degree completions whose source is the Integrated Postsecondary Education Data System (IPEDS). The IPEDS completions data file represents a count of degrees awarded, whereas the NSRCG represents graduates (persons). For additional information on IPEDS see “Comparison with IPEDS Data” in section A.



SECTION A.  
TECHNICAL NOTES



## SECTION A. TECHNICAL NOTES

These technical notes include information on sampling and weighting, survey methodology, sampling and nonsampling errors, and discussions of data comparisons to previous cycles of the National Survey of Recent College Graduates (NSRCG) and the Integrated Postsecondary Education Data System (IPEDS) data. For a more detailed discussion of survey methodology, readers are referred to the 1999 NSRCG Methodology Report.

### OVERVIEW

The National Survey of Recent College Graduates (NSRCG) is sponsored by the National Science Foundation (NSF), Division of Science Resources Statistics (SRS). The NSRCG is one of three data collections covering personnel and graduates in science and engineering. The other two surveys are the National Survey of College Graduates (NSCG) and the Survey of Doctorate Recipients (SDR). Together, they constitute NSF's Scientists and Engineers Statistical Data System (SESTAT). These surveys serve as the basis for developing estimates and characteristics of the total population of scientists and engineers in the United States.

The first NSF-sponsored NSRCG (then known as New Entrants) was conducted in 1974. Subsequent surveys were conducted in 1976, 1978, 1979, 1980, 1982, 1984, 1986, 1988, 1990, 1993, 1995, 1997, and 1999. The initial survey collected data on only bachelor's degree recipients, but all subsequent surveys included both bachelor's and master's degree recipients.

For the 1999 NSRCG, a sample of 279 colleges and universities was asked to provide lists of eligible bachelor's and master's degree recipients. From these lists, a sample of 13,918 graduates (9,786 bachelor's and 4,132 master's recipients) was selected. These graduates were interviewed between May 1999 and March 2000. Computer-assisted telephone interviewing (CATI) served as the primary means of data collection. Mail data collection was used only for those who could not be reached by telephone. The weighted response rates were 99.5 percent for institutions and 78 percent for graduates.

The NSRCG questionnaire underwent relatively few revisions for the 1999 survey. These revisions consisted mainly of deleting a series of questions about alternative

arrangements with employers that had been added for the 1997 cycle only. All revisions were done in coordination with similar revisions to the other SESTAT surveys. Topics covered in the survey include:

- Educational experience before and after obtaining the sampled degree;
- Graduate employment characteristics including occupation, salary, unemployment, underemployment, and postdegree work-related training;
- Relationship between education and employment; and
- Graduate background and demographic characteristics.

### SAMPLE DESIGN

The NSRCG used a two-stage sample design. In the first stage, a stratified nationally representative sample of 279 institutions was selected with probability proportional to size. There were 106 self-representing institutions, also known as certainty units. For each institution, the measure of size was a composite related to both the number of graduates and the proportion of these who were black or Hispanic. The 173 noncertainty institutions were implicitly stratified by sorting the list by type of control (public, private), region, and the percentage of degrees awarded in science or engineering. Institutions were then selected by systematic sampling from the ordered list.

The second stage of the sampling process involved selecting graduates within the sampled institutions by cohort. Each sampled institution was asked to provide lists of graduates for sampling. Within graduation year (cohort), each eligible graduate was then classified into one of 40 strata based on the graduate's major field of study and degree level. While race was not an explicit stratification variable, black, Hispanic, and American Indian/Alaskan Native graduates were assigned a measure of size equal to three, while all other graduates were assigned a measure of size equal to one. This method had the same effect as oversampling black, Hispanic, and American Indian/Alaskan Native graduates by a factor of three. Table 1 lists the major fields and the corresponding sampling rates by cohort and degree.

These rates are overall sampling rates for the major field, and include the institution's probability of selection and the within-institution sampling rate. To achieve the within-institution sampling rate, the overall rate was divided by the institution's probability of selection. The sampling rates by stratum were applied within each eligible responding institution and resulted in sampling 13,918 graduates, slightly larger than the target sample size of 13,500 because persons with unknown majors were also included for complete population coverage.

## GRADUATE ELIGIBILITY

To be included in the sample, the graduates had to meet all of the following criteria:

- They received a bachelor's or master's degree in an eligible major from the college or university from which they were sampled;
- They received their degree within the two academic years in the study. For the 1999 study, there were two academic years (July 1996 through June 1997, and July 1997 through June 1998);

- They were under the age of 76 and were not institutionalized during the week of April 15, 1999 (the reference week); and
- They lived in the United States during the reference week.

## DATA COLLECTION AND RESPONSE

Prior to data collection from graduates, it was first necessary to obtain the cooperation of the sampled institutions that provided lists of graduates. All eligible sampled institutions except one provided graduate lists for the 1999 NSRCG. In addition, one sampled institution was ineligible because no S&E degrees were awarded during the two cohort years for the 1999 survey. The response rates for the institutional list collection were 99.6 percent unweighted and 99.5 percent weighted.

Graduate data collection took place between May 1999 and March 2000, with computer-assisted telephone interviewing as the primary means of data collection. Flyers were sent to all graduates announcing the study and asking for the phone numbers at which they could

Table 1. Major fields and corresponding sampling rates, by cohort and degree: April 1999

Major field	1997 bachelor's rate	1997 master's rate	1998 bachelor's rate	1998 master's rate
Computer sciences .....	0.0082	0.0206	0.0074	0.0189
Biological sciences .....	0.0069	0.0142	0.0066	0.0145
Environmental, agricultural & forestry sciences .....	0.0116	0.0170	0.0107	0.0178
Mathematics/statistics .....	0.0132	0.0224	0.0132	0.0241
Chemistry .....	0.0155	0.0238	0.0152	0.0257
Physics/astronomy .....	0.0448	0.0311	0.0438	0.0328
Other physical sciences, earth sciences, geology oceanography.....	0.0353	0.0368	0.0353	0.0357
Psychology .....	0.0058	0.0085	0.0058	0.0095
Economics .....	0.0097	0.0167	0.0092	0.0172
Political science .....	0.0094	0.0153	0.0096	0.0153
Sociology/anthropology .....	0.0052	0.0178	0.0050	0.0174
Other social sciences .....	0.0082	0.0136	0.0082	0.0139
Aero/astronautical engineering .....	0.1253	0.0798	0.1329	0.0791
Chemical engineering .....	0.0240	0.0467	0.0243	0.0458
Civil engineering .....	0.0148	0.0221	0.0153	0.0224
Electrical engineering .....	0.0121	0.0248	0.0120	0.0244
Industrial engineering .....	0.0428	0.0283	0.0443	0.0262
Mechanical engineering .....	0.0124	0.0256	0.0131	0.0263
Other engineering .....	0.0244	0.0264	0.0237	0.0265
Unknown major .....	0.0069	0.0151	0.0070	0.0149

SOURCE: National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999.

be reached during the survey period. Extensive tracing of graduates was required to obtain the desired response rate. Tracing activities included computerized telephone number searches, national change of address searches (NCOA), school alumni office contacts, school major field department contacts, directory assistance, military locators, post office records, personal referrals from parents or others who knew the graduate, and the use of professional tracing organizations.

Table 2 gives the response rates by cohort, degree, major, type of address, gender, and race/ethnicity. The overall unweighted graduate response rate was 79 percent; the weighted response rate was 78 percent. As can be seen from table 2, response rates varied somewhat by graduate characteristics. Rates were lowest for graduates with school sampling lists that provided no address, provided a foreign address, or identified the graduate as a nonresident alien. It is possible that many unlocated persons with foreign addresses or listed as nonresident aliens were actually ineligible for the survey due to living outside the United States during the survey reference week. However, a graduate was only classified as ineligible if his/her ineligibility status could be confirmed.

## WEIGHT CALCULATIONS

To produce national estimates, the data were weighted. The weighting procedures adjusted for unequal selection probabilities, for nonresponse at the institution and graduate level, and for duplication of graduates on the sampling file (graduates in both cohorts). In addition, a ratio adjustment was made at the institution level, using the number of degrees awarded as reported in IPEDS for specified categories of major and degree level. Because this adjustment was designed to reduce the variability associated with sampling institutions, it was not affected by the differences in target populations between NSRCG and IPEDS at the person level. These differences between NSRCG and IPEDS are discussed in a later section of these notes. The final adjustment to the graduate weights adjusted for responding graduates who could have been sampled twice. For example, a person who obtained an eligible bachelor's degree in 1997 could have obtained an eligible master's degree in 1998 and could have been sampled for either degree. To make the estimates from the survey essentially unbiased, the weights of all responding graduates who could have been sampled twice were divided by 2. The weights of the graduates who were not eligible to be sampled twice were not adjusted.

The weights developed for the 1999 NSRCG comprise both full sample weights for use in computing survey estimates, and replicate weights for variance estimation using a jackknife replication variance estimation procedure.

## DATA EDITING

Most editing checks were included within the CATI system, including range checks, skip pattern rules, and logical consistency checks. Skip patterns were controlled by the CATI system so that inappropriate items were avoided and appropriate items were not missed. For logical consistency check violations, CATI screens appeared that explained the discrepancy and asked the respondent for corrections. Some additional logical consistency checks were added during data preparation. All of the edit checks discussed above were rerun after item nonresponse imputation.

## IMPUTATION OF MISSING DATA

Missing data occurred if the respondent cooperated with the survey but did not answer one or more individual questions. The level of item nonresponse in this study was very low (typically 1 percent or less) due to the use of CATI for data collection and of data retrieval techniques for missing key items. However, imputation for item nonresponse was performed for each survey item to make the study results simpler to present and to allow consistent totals to be obtained when analyzing different questionnaire items. "Not applicable" responses were not imputed because these represented respondents who were not eligible to answer the given item.

Imputation was performed using a hot-deck method. Hot-deck methods estimate the missing value of an item by using values of the same item from other record(s) in the same file. Using the hot-deck procedure, each missing questionnaire item was imputed separately. First, respondent records were sorted by items thought to be related to the missing item. Next, a value was imputed for each item nonresponse recipient from a respondent donor within the same subgroup. The results of the imputation procedure were reviewed to ensure that the plan had been followed correctly. In addition, all edit checks were run on the imputed file to be sure that no data inconsistencies were created in the imputation process.

Table 2. Number of graduates, unweighted graduate response rates, and weighted graduate response rates, by graduate characteristics: April 1999

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Graduate characteristic	Total	Response		Non-response	Unweighted graduate response rate <sup>2</sup>	Weighted graduate response rate <sup>2</sup>
		Complete	Ineligible <sup>1</sup>			
						Percent
Total .....	13,918	9,984	987	2,947	78.8	77.8
Graduation cohort <sup>3</sup>						
1996-1997 .....	6,955	4,858	523	1,574	77.4	76.4
1997-1998 .....	6,963	5,126	464	1,373	80.3	79.2
Sampled degree <sup>3</sup>						
Bachelor's. ....	9,786	7,111	610	2,065	78.9	77.6
Master's .....	4,132	2,873	377	882	78.7	78.5
Sampled degree major <sup>3</sup>						
Computer sciences .....	928	640	62	226	75.6	74.9
Biological sciences .....	1,340	1,038	72	230	82.8	83.5
Environmental/agricultural science .....	467	366	29	72	84.6	85.3
Mathematics/statistics .....	587	449	24	114	80.6	82.0
Chemistry .....	469	384	15	70	85.1	85.8
Physics/astronomy .....	455	352	27	76	83.3	84.1
Other physical sciences, earth science .....	492	408	26	58	88.2	88.3
Psychology .....	1,536	1,074	73	389	74.7	75.8
Economics .....	517	306	45	166	67.9	68.0
Political science .....	1,100	741	77	282	74.4	75.0
Sociology/anthropology .....	600	422	33	145	75.8	75.8
Other social sciences .....	646	441	51	154	76.2	75.9
Aero/astronautical engineering .....	463	370	14	79	82.9	80.9
Chemical engineering. ....	492	391	24	77	84.3	84.7
Civil engineering .....	558	436	22	100	82.1	83.1
Electrical engineering .....	946	696	36	214	77.4	76.8
Industrial engineering .....	488	349	29	110	77.5	76.9
Mechanical engineering .....	599	464	31	104	82.6	82.2
Other engineering .....	682	531	46	105	84.6	84.5
Not reported .....	553	126	251	176	68.2	67.8
Type of address provided by school at time of sampling <sup>4</sup>						
U.S. address only .....	12,281	9,181	692	2,408	80.4	79.4
Foreign address .....	565	255	134	176	68.8	67.1
No address .....	1,072	548	161	363	66.1	64.9
Gender of graduate <sup>3</sup>						
Male .....	7,372	5,339	487	1,546	79.0	77.5
Female .....	5,403	3,855	421	1,127	79.1	78.7
Not reported .....	1,143	790	79	274	76.0	74.7

See end of table for notes and sources.

Table 2. Number of graduates, unweighted graduate response rates, and weighted graduate response rates, by graduate characteristics: April 1999

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Graduate characteristic	Total	Response		Non-response	Unweighted graduate response rate <sup>2</sup>	Weighted graduate response rate <sup>2</sup>
		Complete	Ineligible <sup>1</sup>			
						Percent
Race/ethnicity <sup>3</sup>						
White, non-Hispanic .....	5,865	4,649	272	944	83.9	82.3
Hispanic .....	1,510	1,089	84	337	77.7	76.0
Black, non-Hispanic .....	1,618	1,140	83	395	75.6	73.7
Asian or Pacific islander .....	1,029	699	67	263	74.4	74.3
American Indian or Alaskan native .....	105	81	3	21	80.0	76.3
Nonresident alien .....	475	253	70	152	68.0	65.4

<sup>1</sup>The 987 ineligible include the following: graduates living outside the United States during the week of April 15, 1999 (370); graduates who reported an ineligible major field for their sampled degree (361); those who did not receive a degree within the correct time frame (208); those who did not attend the sampled school (18); deceased (13); duplicates (8); institutionalized (4); those who did not receive a bachelor's or master's degree (4); and other ineligible (1).

<sup>2</sup> The graduate response rate is calculated as  $(R-I)/[(R-I)+(N \cdot p)]$  where R=Response (complete plus ineligible), I=Ineligible, N=Nonresponse, p=Proportion of response found in scope calculated as  $(R-I)/R$ .

<sup>3</sup> The cohort, degree, major, gender, and race/ethnicity codes are those reported by institutions at the time of sampling and may not match data reported by the respondents on the survey.

<sup>4</sup> This reflects the type of address provided by the institution at the time of sampling. Additional address information may have been provided by the alumni office during data collection. Graduates for whom both U.S. and foreign addresses were provided are included in the foreign address category.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999.

## ACCURACY OF ESTIMATES

The survey estimates provided in these tables are subject to two sources of error: sampling and nonsampling errors. Sampling errors occur because the estimates are based on a sample of individuals in the population rather than on the entire population and hence are subject to sampling variability. If the interviews had been conducted with a different sample, the responses would not have been identical; some figures might have been higher, while others might have been lower.

The standard error is the measure of the variability of the estimates due to sampling. It indicates the variability of a sample estimate that would be obtained from all possible samples of a given design and size. Standard errors can be used as a measure of the precision expected from a particular sample. Tables 3 and 4 contain standard errors for key statistics included in the detailed tables.

If all possible samples were surveyed under similar conditions, intervals within plus or minus 1.96 standard

errors of a particular statistic would include the true population parameter being estimated in about 95 percent of the samples. This is the 95 percent confidence interval. For example, suppose the total number of 1997 and 1998 bachelor's degree recipients majoring in engineering is 114,612 and the estimated standard error is 4,297. In this case, the 95 percent confidence interval for the statistic would extend from:

$$114,612 - (4,297 \times 1.96) \text{ to } 114,612 + (4,297 \times 1.96) \\ = 106,190 \text{ to } 123,034$$

This means that one can be confident that intervals constructed in this way contain the true population parameter for 95 percent of all possible samples.

Estimates of standard errors were computed using a technique known as jackknife replication. As with any replication method, jackknife replication involves constructing a number of subsamples (replicates) from the full sample and computing the statistics of interest for each replicate. The mean square error of the replicate

Table 3. Unweighted number, weighted estimate, and standard errors for 1997 and 1998 science and engineering bachelor's degree recipients, by graduate characteristics: April 1999

Characteristic	Unweighted number	Weighted number		Weighted percent	
		Estimate	Standard error <sup>1</sup>	Estimate	Standard error <sup>1</sup>
Total 1997 and 1998 science and engineering bachelor's degree recipients .....	7,208	743,430	15,273	100	--
Sex					
Male .....	4,069	366,786	7,719	49.3	1.04
Female .....	3,139	376,644	13,316	50.7	1.04
Race/ethnicity					
White, non-Hispanic .....	4,594	561,285	16,116	75.5	0.92
Black, non-Hispanic .....	938	51,618	3,717	6.9	0.55
Hispanic .....	977	54,150	2,468	7.3	0.37
Asian/Pacific Islander .....	630	71,613	3,528	9.6	0.44
American Indian/Alaskan Native .....	69	4,765	739	0.6	0.10
Type of major field					
Science .....	5,026	628,819	17,008	84.6	0.73
Engineering .....	2,182	114,612	4,297	15.4	0.73
Major field of study					
Computer and information sciences .....	338	46,029	2,841	6.2	0.36
Life and related sciences .....	1,175	164,042	5,499	22.1	0.55
Mathematical sciences .....	306	23,742	1,488	3.2	0.17
Physical and related sciences .....	884	36,545	1,794	4.9	0.20
Psychology .....	787	146,704	6,119	19.7	0.58
Social and related sciences .....	1,536	211,756	7,232	28.5	0.66
Engineering .....	2,182	114,612	4,297	15.4	0.73
Occupation (those employed)					
Computer and information scientists .....	551	52,707	2,910	7.1	0.35
Life and related scientists .....	203	25,297	1,815	3.4	0.25
Mathematical and related scientists .....	41	3,774	679	0.5	0.09
Physical scientists .....	349	19,197	1,264	2.6	0.16
Psychologists .....	51	8,325	1,379	1.1	0.18
Social and related scientists .....	76	10,195	1,447	1.4	0.19
Engineers .....	1,435	78,702	3,365	10.6	0.53
Other occupations .....	3,488	427,414	11,965	57.5	0.75

<sup>1</sup>Standard errors were calculated with the WesVar program using the JK2 option.

**KEY:** -- = Not applicable.

**NOTES:** Represents graduates from July 1996 through June 1998. Details may not add to totals due to rounding.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

Table 4. Unweighted number, weighted estimate, and standard errors for 1997 and 1998 science and engineering master's degree recipients, by graduate characteristics: April 1999

Characteristic	Unweighted number	Weighted number		Weighted percent	
		Estimate	Standard error <sup>1</sup>	Estimate	Standard error <sup>1</sup>
Total 1997 and 1998 science and engineering master's degree recipients .....	2,929	157,029	3,578	100	--
Sex					
Male .....	1,847	91,722	2,249	58.4	1.22
Female .....	1,082	65,307	2,819	41.6	1.22
Race/ethnicity					
White, non-Hispanic .....	1,709	104,383	2,810	66.5	0.96
Black, non-Hispanic .....	295	8,377	817	5.3	0.47
Hispanic .....	264	7,710	617	4.9	0.39
Asian/Pacific Islander .....	645	35,763	1,585	22.8	0.92
American Indian/Alaskan Native .....	16	796	244	0.5	0.16
Type of major field					
Science .....	1,784	110,367	3,588	70.3	1.14
Engineering .....	1,145	46,663	1,701	29.7	1.14
Major field of study					
Computer and information sciences .....	330	19,951	1,346	12.7	0.84
Life and related sciences .....	263	16,569	1,672	10.6	1.07
Mathematical sciences .....	145	7,236	548	4.6	0.34
Physical and related sciences .....	276	9,056	516	5.8	0.32
Psychology .....	348	30,015	2,645	19.1	1.47
Social and related sciences .....	422	27,540	1,676	17.5	0.93
Engineering .....	1,145	46,663	1,701	29.7	1.14
Occupation (those employed)					
Computer and information scientists .....	470	26,159	1,432	16.7	0.86
Life and related scientists .....	105	6,419	599	4.1	0.38
Mathematical and related scientists .....	79	4,220	491	2.7	0.30
Physical scientists .....	178	6,256	445	4.0	0.29
Psychologists .....	114	10,201	992	6.5	0.60
Social and related scientists .....	107	7,259	723	4.6	0.44
Engineers .....	717	28,853	1,331	18.4	0.92
Other occupations .....	832	49,787	2,423	31.7	1.18

<sup>1</sup>Standard errors were calculated with the WesVar program using the JK2 option.

**KEY:** -- = Not applicable.

**NOTES:** Represents graduates from July 1996 through June 1998. Details may not add to totals due to rounding.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

estimates around their corresponding full sample estimate provides an estimate of the sampling variance of the statistic of interest. To construct the replicates, 86 stratified subsamples of the full sample were created. Eighty-six jackknife replicates were then formed by deleting one subsample at a time from the full sample. WesVar, a computer program developed at Westat, was used to calculate direct estimates of standard errors for a number of statistics from the survey.

## GENERALIZED VARIANCE FUNCTIONS

Computing and printing standard errors for each estimate from the survey is a time consuming and costly effort. For this survey, a different approach was taken for estimating the standard errors of the estimates included in this report. First, the standard errors for a large number of different estimates were directly computed using the jackknife replication procedures described above. Next, models were fitted to the estimates and standard errors and the parameters of these models were estimated from the direct estimates. These models and their estimated parameters were used to approximate the standard error of an estimate from the survey. This process is called the development of generalized variance functions.

Models were fitted for the two types of estimates of primary interest: estimated totals and estimated percentages. It should be noted that the models used to estimate the generalized variance functions may not be completely appropriate for all estimates.

## SAMPLING ERRORS FOR TOTALS

For estimated totals, the generalized variance function applied assumes that the relative variance of the estimate (the square of the standard error divided by the square of the estimate) is a linear function of the inverse of the estimate. Using this model, the standard error of an estimate can be computed as:

$$se(y) = \sqrt{ay^2 + by} \quad (1)$$

where  $se(y)$  is the standard error of the estimate  $y$ , and  $a$  and  $b$  are estimated parameters of the model. The parameters of the models were computed separately for 1997 bachelor's, 1997 master's, 1998 bachelor's, and 1998 master's recipients for important domains of interest. The estimates of the parameters are given in table 5.

The following steps should be followed to approximate the standard error of an estimated total:

1. obtain the estimated total from the survey,
2. determine the most appropriate domain for the estimate from table 5,
3. refer to table 5 to get the estimates of  $a$  and  $b$  for this domain, and
4. compute the generalized variance using equation (1) above.

For example, suppose that the number of 1997 bachelor's degree recipients in engineering who were currently working in an engineering-related job was 39,400 ( $y = 39,400$ ). The most appropriate domain from table 5 is engineering majors with bachelor's degrees from 1997 and the parameters are  $a = 0.001360$  and  $b = 73.981$ . Approximate the standard error using equation (1) as:

$$se(39,400) = \sqrt{.001360(39,400)^2 + 73.981(39,400)} = 2,242.$$

## SAMPLING ERRORS FOR PERCENTAGES

The model used to approximate the standard errors for estimates of percentages was somewhat less complex. The generalized variance for estimated percentages assumed that the ratio of the variance of an estimate to the variance of the same estimate from a simple random sample of the same size was a constant. This ratio is called the design effect and is often labeled the DEFF. Since the variance for an estimated percentage,  $p$ , from a simple random sample is  $p(100 - p)$  divided by the sample size, the standard error of an estimated percentage can be written as:

$$se(p) = \sqrt{DEFF(p)(100 - p)/n} \quad (2)$$

where  $n$  is the sample size or denominator of the estimated percentage. DEFFs were computed separately for 1997 bachelor's, 1997 master's, 1998 bachelor's, and 1998 master's recipients for important domains of interest. The median or average values of the DEFFs from these computations are given in table 5.

Table 5. Estimated parameters for computing generalized variances for estimates from the 1999 NSRCG

Domain	Bachelor's recipients			Master's recipients		
	a	b	DEFF	a	b	DEFF
<b>1997 graduates</b>						
All graduates .....	0.000362	178.959	1.9	0.000100	104.491	1.7
Sex						
Male .....	0.000448	140.253	1.7	-0.000221	82.248	1.5
Female .....	0.001020	188.494	1.7	0.001120	90.087	1.5
Major						
Science majors .....	0.000617	205.101	1.6	0.000741	108.037	1.7
Engineering majors .....	0.001360	73.981	1.7	0.000706	41.883	1.2
Occupation						
Scientists .....	0.000391	141.597	1.6	-0.000553	84.331	1.3
Engineers .....	0.001170	92.632	1.8	0.000194	51.631	1.2
Other .....	0.000451	199.042	1.6	0.003460	81.213	1.3
Race/ethnicity						
White, non-Hispanic .....	0.000613	211.962	1.6	0.000461	85.972	1.4
Black, non-Hispanic .....	0.008760	74.712	1.7	0.011640	32.210	1.5
Hispanic .....	0.001300	84.322	1.7	0.016630	27.721	1.6
Asian/Pacific Islander .....	0.000185	146.232	1.3	-0.000450	70.206	1.5
American Indian/Alaskan Native .....	*	*	1.7	0.005100	78.874	1.5
<b>1998 graduates</b>						
All graduates .....	0.000535	124.854	1.8	0.000143	79.164	1.5
Sex						
Male .....	0.000187	133.510	1.6	0.000065	67.217	1.4
Female .....	0.001340	173.468	1.7	0.001640	70.395	1.4
Major						
Science majors .....	0.001020	125.447	1.6	0.000872	74.059	1.4
Engineering majors .....	0.000570	71.556	1.5	-0.000748	50.652	1.2
Occupation						
Scientists .....	0.001550	117.499	1.6	0.000008	67.588	1.3
Engineers .....	0.001030	69.092	1.5	0.000348	44.580	1.2
Other .....	0.001020	141.673	1.5	0.002040	63.025	1.3
Race/ethnicity						
White, non-Hispanic .....	0.000611	178.402	1.6	-0.000118	80.561	1.3
Black, non-Hispanic .....	0.006360	72.222	1.6	0.003180	42.757	1.5
Hispanic .....	0.000439	102.653	1.7	-0.002300	46.015	1.7
Asian/Pacific Islander .....	-0.000159	166.926	1.4	-0.000384	65.071	1.2
American Indian/Alaskan Native .....	0.051770	53.434	1.6	0.027470	42.640	1.2

**KEY:** 1999 NSRCG=The 1999 National Survey of Recent College Graduates

DEFF = Design effect.

\* = Estimates not reported because the specified model resulted in R-square values too small to report.

**SOURCE:** National Science Foundation, Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

The following steps should be followed to approximate the standard error of an estimated percentage:

1. obtain the estimated percentage and sample size from the survey,
2. determine the most appropriate domain for the estimate from table 5,
3. refer to table 5 to get the estimates of the DEFF for this domain, and
4. compute the generalized variance using equation (2) above.

For example, suppose that the percentage of 1997 bachelor's degree recipients in engineering who were currently working in an S&E job was 67 percent ( $p = 67$ ) and the number of engineering majors from the survey (sample size,  $n$ ) was 1,100. The most appropriate domain from table 5 is engineering majors with bachelor's degrees from 1997 and the DEFF for this domain is 1.7. Approximate the standard error using equation (2) as:

$$se(67\%) = \sqrt{1.7(67)(100 - 67)/1100} = 1.85\%$$

## NONSAMPLING ERRORS

In addition to sampling errors, the survey estimates are subject to nonsampling errors that can arise because of nonobservation (nonresponse or noncoverage), reporting errors, and errors made in the collection and processing of the data. These errors can sometimes bias the data. The 1999 NSRCG included procedures specifically designed to minimize nonsampling error. In addition, some special studies conducted during the previous cycles of the NSRCG provided some measures of nonsampling errors that are useful in understanding the data from the current survey as well.

Procedures to minimize nonsampling errors were followed throughout the survey. Extensive questionnaire design work was done by Mathematica Policy Research (MPR), NSF, and Westat. This work included focus groups, expert panel reviews, and mail and CATI pretests. This design work was done in conjunction with the other two SESTAT surveys.

Comprehensive training and monitoring of interviewers and data processing staff helped to ensure the consistency and accuracy of the data file. Data

collection was done almost entirely by telephone to help reduce the amount of item nonresponse and item inconsistency. Mail questionnaires were used for cases difficult to complete by telephone. Nonresponse was handled in ways designed to minimize the impact on data quality (through weighting adjustments and imputation). In data preparation, a special effort was made in the area of occupational coding. Respondent-chosen codes were verified by data preparation staff using a variety of information collected on the survey and applying coding rules developed by NSF for the SESTAT system.

While general sampling theory can be used to estimate the sampling variability of a statistic, the measurement of nonsampling error is not easy and usually requires that an experiment be conducted as part of the data collection, or that data external to the study be used. In the 1995 NSRCG, two quality analysis studies were conducted: (1) an analysis of occupational coding; and (2) a CATI reinterview. As noted above, these special studies can also inform analysts about the 1999 survey data.

The occupational coding report included an analysis of the 1995 CATI autocoding of occupation and the best coding operation. During CATI interviewing, each respondent's verbatim occupation description was autocoded by computer into a standard SESTAT code whenever possible. Autocoding included both coding directly to a final category and coding to an intermediate code-selection screen. If the description could not be autocoded, the respondent was asked to select the appropriate occupation category during the interview. For the primary occupation, 22 percent of the responses were autocoded to a final category and 19 percent were autocoded to an intermediate screen. The results of the occupation autocoding were examined, and the process was found to be successful and efficient.

For the best coding operation, an occupational worksheet for each respondent was generated and reviewed by an experienced occupational coder. This review was based on the work-related information provided by the graduate. If the respondent's self-selected occupation code was inappropriate, a new, or "best," code was assigned. A total of 17,894 responses were received to the three occupation questions in the 1995 survey cycle. Of these, 25 percent received updated codes during the best coding process, with 16 percent being recoded from the "other" category and 9 percent recoded from the "nonother" categories. This analysis indicated that the best coding activity was necessary to ensure that the most

appropriate occupation codes were included on the final data file. As a result of this 1995 NSRCG quality study, the best coding procedure was implemented in the 1997 and 1999 surveys as well.

The second quality analysis study conducted in the 1995 NSRCG involved a reinterview of a sample of 800 respondents. For this study, sampled respondents were interviewed a second time, and responses to the two interviews were compared. This analysis found that the questionnaire items in which respondents were asked to provide reasons for certain events or behaviors had relatively large index of inconsistency values. Examples include reasons for not working during the reference week and reasons for working part time. High response variability is typical for items that ask about reasons and beliefs rather than behaviors, and the results were not unusual for these types of items. Some of the other differences between the two interviews were attributed to the time lag between the original interview and reinterview.

For the 1993 NSRCG, two data quality studies were completed: (1) an analysis of interviewer variance and (2) a behavioral coding analysis of 100 recorded interviews. The interviewer variance study was designed to measure the impact of interviewer effects on the precision of the estimates. The results showed that interviewer effects for most items were minimal and thus had a very limited effect on the standard error of the estimates. Interviewer variance was highest for open-ended questions.

The behavioral coding study was done to observe the extent to which interviewers were following the structured interview and the extent to which it became necessary for them to give unstructured additional explanation or comments to respondents. As part of the study, 100 interviews were taped and then coded on a variety of behavioral dimensions. This analysis revealed that, on the whole, the interview proceeded in a very structured manner, with 85 percent of all question and answer “dyads” being “asked and answered only.” Additional unstructured interaction/discussion took place most frequently for those questions in which there was some ambiguity in the topic. In most cases this interaction was judged to have facilitated obtaining the correct response.

For both survey cycles, results from the quality studies were used to identify those questionnaire items

that might need additional revision for the next study cycle. Debriefing sessions concerning the survey were held with interviewers, and this information was also used in revising the survey for the next cycle.

## COMPARISONS OF DATA WITH PREVIOUS YEARS' RESULTS

A word of caution needs to be given concerning comparisons with previous NSRCG results. During the 1993 cycle, the SESTAT system underwent considerable revision in several areas, including survey eligibility, data collection procedures, questionnaire content and wording, and data coding and editing procedures. The changes made for the 1995 through 1999 cycles were less significant but might affect some data trend analysis. While the 1993 through 1999 survey data are fairly comparable, care must be taken when comparing results from the 1990s surveys to surveys from the 1980s, due to the significant changes made in 1993. For a detailed discussion of these changes, please see the 1993, 1995, 1997, and 1999 NSRCG methodology reports.

For the 1999 NSRCG, there were no significant procedural changes that would affect the comparison of results between the 1997 and 1999 survey cycles.

## COMPARISONS WITH IPEDS DATA

The National Center for Education Statistics (NCES) conducts a survey of the nation's postsecondary institutions, called the Integrated Postsecondary Education Data System (IPEDS). The IPEDS Completions Survey reports on the number of degrees awarded by all major fields of study, along with estimates by gender and race/ethnicity.

Although both the NSRCG and IPEDS are surveys of postsecondary education and both report on completions from those institutions, there are important differences in the target populations for the two surveys that directly affect the estimates of the number of graduates. The reason for the different target populations is that the goals of the surveys are not the same. The IPEDS estimates of degrees awarded are intended to measure the output of the educational system. The NSRCG estimates are intended to measure the supply and utilization of a portion of graduates in the years following their completion of degrees. These goals result in definitions of the target population that are not completely consistent for the two surveys. Other

differences between the estimates can be explained to a very large extent by a few important aspects of the design or reporting procedures in the two surveys. The main differences between the two studies that affect comparisons of estimates overall and by race/ethnicity are listed below.

- The IPEDS Completions data file represents a count of degrees awarded, whereas the NSRCG represents graduates (persons). If a person receives more than one degree, institutions are instructed to report each degree separately in IPEDS. In the NSRCG, each person is counted only once.
- The NSRCG includes only people who were residing in the United States during the reference week for the survey (the week of April 15 of the survey year). People who received degrees during the years covered by the survey, but resided outside the United States during the reference week, appear in IPEDS counts but not in NSRCG counts.
- The NSRCG includes only major fields of study that meet the specific SESTAT system definition of science and engineering (S&E), while IPEDS includes all fields. The SESTAT field codes were designed to map directly to the 6-digit Classification of Instructional Program (CIP) codes used in IPEDS. However, published reports from the two studies may group the specific field codes differently for reporting purposes. Therefore, when comparing the NSRCG estimates in this report to IPEDS, care must be taken to select and group the IPEDS estimates according to the NSRCG field definitions shown in the appendix. For example, the NSRCG reporting category of Computer and Information Sciences does not include computer programming or data processing technology, but these fields are included in this category in NCES's *Digest of Education Statistics*. In addition, several NSRCG reporting categories include fields classified as multi/interdisciplinary studies in IPEDS. The NSRCG reporting category of social and related sciences has the most differences in definition from IPEDS. The IPEDS category for social and related sciences also includes history whereas the NSF category excludes history.
- The IPEDS data reflect information submitted by institutions from administrative records, whereas the NSRCG represents reports of individual graduates collected in interviews. Often, estimates differ when the mode of data collection and sources of data are different.

- Whereas the IPEDS is a census of postsecondary institutions, the NSRCG is a sample survey. As a result, NSRCG estimates include the sampling error inherent in all sample surveys.
- There is an additional consideration for estimates by race/ethnicity. Prior to the 1994–95 academic year, IPEDS collected race/ethnicity data only by broad 2-digit CIP code fields, not by the specific 6-digit CIP fields needed to identify the S&E fields as defined on NSRCG. Therefore, it is not possible to obtain IPEDS race/ethnicity data that precisely match the S&E population as defined by NSRCG for the academic years prior to 1995. For example, the 2-digit CIP for social sciences and history includes history, which is not an S&E field, but does not include such S&E fields as agricultural economics and public policy analysis which are included in the NSF category for social and related sciences.

Despite these factors, the NSRCG and IPEDS estimates are consistent when appropriate adjustments for these differences are made. For example, the proportional distributions of graduates by field of study are nearly identical, and the numerical estimates are similar. Further information on the comparison of NSRCG and IPEDS estimates is available in the report, *A Comparison of Estimates in the NSRCG and IPEDS*, available in the SRS website, at <http://www.nsf.gov/sbe/srs/stats.htm>.

## OTHER EXPLANATORY INFORMATION

### DEFINITIONS

The following definitions are provided to facilitate the reader's use of the data in this report.

**Major field of study:** Major field of study is derived from the survey major field category most closely related to the respondent's degree field. Exhibit 1 gives a listing of the detailed major field codes used in the survey. Exhibit 2 gives a listing of the summary major field codes developed by NSF and used in the tables. The appendix lists the eligible and ineligible major fields within each summary category.

**Occupation:** Occupation is derived from the survey job list category most closely related to the respondent's primary job. Exhibit 3 gives a listing of the detailed job codes used in the survey, and Exhibit 4 gives the summary occupation codes developed by NSF and used in the tables.

**Labor force:** The labor force includes individuals working full or part time as well as those not working but seeking work or on layoff. It is a sum of the employed and the unemployed.

**Unemployed:** The unemployed are those who were not working on April 15 and were seeking work or on layoff from a job.

**Type of employer:** Type of employer is the sector of employment in which the respondent was working on his or her primary job held during the week of April 15, 1999. The following are the definitions for each of these categories. Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions. It also includes persons reporting that they were self-employed. Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions. Government includes local, state, and Federal Government; military; and commissioned corps.

**Primary work activity:** Primary work refers to the activity that occupied the most time on the respondent's job. In reporting the data, those who reported applied research, basic research, development, or design work were grouped together in "research and development (R&D)." Those who reported accounting, finance or contracts, employee relations, quality or productivity management, sales and marketing, or managing and supervising were grouped into "management, sales, administration." Those who reported production, operations, maintenance, professional services or other activities were given the code "other."

**Full-time salary:** Full-time salary is the annual salary for the full-time employed, defined as those who were not self-employed (either incorporated or not incorporated), whose principal job was not less than 35 hours per week, and who were not full-time students on the reference date (April 15, 1999). Graduates who did not receive salaries were asked to report earned income, excluding business expenses. To annualize salary, reported hourly salaries were multiplied by the reported number of hours paid per week, then multiplied by 52; reported weekly salaries were multiplied by 52; reported monthly salaries were multiplied by 12. Yearly and academic yearly salaries were left as reported.

**Race/ethnicity:** All graduates, both U.S. citizens and non-U.S. citizens, are included in the race/ethnicity data presented in this report. In tables with sufficient sample size, race/ethnicity data are presented by the specific categories of white, non-Hispanic; black, non-Hispanic; Hispanic; Asian or Pacific Islander; and American Indian or Alaskan Native. In tables where the sample size is not sufficient to present data by specific category, the groups of black, Hispanic, and American Indian or Alaskan Native are combined into the underrepresented minority category.

## COVERAGE OF TABLES

The tables in this report present information for two groups of recent graduates. The first of these groups consists of persons who earned bachelor's degrees in S&E fields from U.S. institutions during academic years 1997 and 1998. The second group includes those who earned S&E master's degrees during the same two years.



# EXHIBIT 1. LIST A: EDUCATION CODES

This EDUCATION CODES list is ordered alphabetically. The titles in bold type are broad fields of study. To make sure you have found the BEST code, please review ALL broad categories before making your choice. If you cannot find the code that BEST describes your field of study, use the “OTHER” code under the most appropriate broad field in bold print. If none of the codes fit your field of study, use Code 995.

## **Agriculture Business and Production**

- 601 Agriculture, economics (also see 655 and 923)
- 602 OTHER agricultural business and production

## **Agricultural Sciences**

- 605 Animal sciences
- 606 Food sciences and technology (also see 638)
- 607 Plant sciences (also see 633)
- 608 OTHER agricultural sciences

## **610 Architecture/Environmental Design**

(for architectural engineering, see 723)

## **620 Area/Ethnic Studies**

## **Biological/Life Sciences**

- 631 Biochemistry and biophysics
- 632 Biology, general
- 633 Botany (also see 607)
- 634 Cell and molecular biology
- 635 Ecology
- 636 Genetics, animal and plant
- 637 Microbiology
- 638 Nutritional sciences (also see 606)
- 639 Pharmacology, human and animal (also see 788)
- 640 Physiology, human and animal
- 641 Zoology, general
- 642 OTHER biological sciences

## **Business Management/Administrative Services**

- 651 Accounting
- 652 Actuarial science
- 653 Business administration and management
- 654 Business, general
- 655 Business/managerial economics (also see 601 and 923)
- 656 Business marketing/marketing management
- 657 Financial management
- 658 Marketing research
- 843 Operations research
- 659 OTHER business management/admin. services

## **Communications**

- 661 Communications, general
- 662 Journalism
- 663 OTHER communications

## **Computer and Information Sciences**

- 671 Computer/information sciences, general
- 672 Computer programming
- 673 Computer science (also see 727)
- 674 Computer systems analysis
- 675 Data processing technology
- 676 Information services and systems
- 677 OTHER computer and information sciences

## **Conservation/Renewable Natural Resources**

- 680 Environmental science studies
- 681 Forestry sciences
- 682 OTHER conservation/renewable natural resources

## **690 Criminal Justice/Protective Services**

(also see 922)

## **Education**

- 701 Administration
- 702 Computer teacher education
- 703 Counselor education/guidance services
- 704 Educational psychology
- 705 Elementary teacher education
- 706 Mathematics teacher education
- 707 Physical education/coaching
- 708 Pre-elementary teacher education
- 709 Science teacher education
- 710 Secondary teacher education
- 711 Special education
- 712 Social science teacher education
- 713 OTHER education

## **Engineering**

- 721 Aerospace, aeronautical, astronautical engineering
- 722 Agricultural engineering
- 723 Architectural engineering

# EXHIBIT 1. LIST A: EDUCATION CODES (CONTINUED)

## Engineering (continued)

- 724 Bioengineering and biomedical engineering
- 725 Chemical engineering
- 726 Civil engineering
- 727 Computer/systems engineering (also see 673)
- 728 Electrical, electronics, communications engineering (also see 751)
- 729 Engineering sciences, mechanics, physics
- 730 Environmental engineering
- 731 General engineering
- 732 Geophysical engineering
- 733 Industrial engineering (also see 752)
- 734 Materials engineering, including ceramics and textiles
- 735 Mechanical engineering (also see 753)
- 736 Metallurgical engineering
- 737 Mining and minerals engineering
- 738 Naval architecture and marine engineering
- 739 Nuclear engineering
- 740 Petroleum engineering
- 741 OTHER engineering

## Engineering-Related Technologies

- 751 Electrical and electronic technologies
- 752 Industrial production technologies
- 753 Mechanical engineering-related technologies
- 754 OTHER engineering-related technologies

## Languages, Linguistics, Literature/Letters

- 760 English Language and Literature/Letters
- 771 Linguistics
- 772 OTHER foreign languages and literature

## Health Professions and Related Sciences

- 781 Audiology and speech pathology
- 782 Health services administration
- 783 Health/medical assistants
- 784 Health/medical technologies
- 785 Medical preparatory programs (e.g., pre-dentistry, pre-medical, pre-veterinary)
- 786 Medicine (e.g., dentistry, optometry, osteopathic, podiatry, veterinary)
- 787 Nursing (4 years or longer program)
- 788 Pharmacy (also see 639)
- 789 Physical therapy and other rehabilitation/therapeutic services
- 790 Public health (including environmental health and epidemiology)
- 791 OTHER health/medical sciences

## 800 Home Economics

## 810 Law/Prelaw/Legal Studies

## 820 Liberal Arts/General Studies

## 830 Library Science

## Mathematics

- 841 Applied mathematics (also see 843, 652)
- 842 Mathematics, general
- 843 Operations research
- 844 Statistics
- 845 OTHER mathematics

## 850 Parks, Recreation, Leisure, and Fitness Studies

## Philosophy, Religion, and Theology

- 861 Philosophy of science
- 862 OTHER philosophy, religion, theology

## Physical Sciences

- 871 Astronomy and astrophysics
- 872 Atmospheric sciences and meteorology
- 631 Biochemistry and biophysics
- 873 Chemistry
- 874 Earth sciences
- 680 Environmental science studies
- 875 Geology
- 876 Geological sciences, other
- 877 Oceanography
- 878 Physics
- 879 OTHER physical sciences

## Psychology

- 891 Clinical
- 892 Counseling
- 704 Educational
- 893 Experimental
- 894 General
- 895 Industrial/Organizational
- 896 Social
- 897 OTHER psychology

## Public Affairs

- 901 Public administration
- 902 Public policy studies
- 903 OTHER public affairs

## 910 Social Work

# EXHIBIT 1. LIST A: EDUCATION CODES (CONTINUED)

## **Social Sciences and History**

- 921 Anthropology and archeology
- 922 Criminology (also see 690)
- 923 Economics (also see 601 and 655)
- 924 Geography
- 925 History of science
- 926 History, other
- 927 International relations
- 928 Political science and government
- 929 Sociology
- 930 OTHER social sciences

## **Visual and Performing Arts**

- 941 Dramatic arts
- 942 Fine arts, all fields
- 943 Music, all fields
- 944 OTHER visual and performing arts
  
- 991 **Other science/engineering**
- 995 **Other Fields - Not Listed**



## EXHIBIT 2. MAJOR CODE CATEGORIES FOR TABULATIONS

### 1. Computer and information sciences

Computer science and information sciences 671, 673, 674, 676, 677

### 2. Life and related sciences

Agricultural and food sciences 605-608

Biological sciences 631-642, 991, (781-791 Ph.D. degree only)

Environmental life sciences, including forestry sciences 680, 681

### 3. Mathematical sciences

Mathematics and related sciences 841-845

### 4. Physical and related sciences

Chemistry, except biochemistry 873

Earth sciences, geology, and oceanography 872, 874-877

Physics and astronomy 871, 878

Other physical sciences 879

### 5. Psychology

Psychology 891-897, 704

### 6. Social and related sciences

Economics 601, 923

Political science and related sciences 902, 927, 928

Sociology and anthropology 921, 922, 929

Other social sciences 771, 861, 924, 925, 930, 620

### 7. Engineering

Aerospace and related engineering 721

Chemical engineering 725

Civil and architectural engineering 726, 723

Electrical, electronic, computer, and communications engineering 727, 728

Industrial engineering 733

Mechanical engineering 735

Other engineering 722, 724, 729-732, 734, 736-741

### 8. Other majors

602, 610, 651-659, 661-663, 672, 675, 682, 690, 701-703, 705-713, 751-754, 760, 772, 781-791\*, 800, 810, 820, 830, 850, 862, 901, 903, 910, 926, 941-944, 995

\*At the BA, MA, or professional level.

SOURCE: National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999



## EXHIBIT 3. LIST B: JOB CODES

This JOB CODES list is ordered alphabetically. The titles in bold type are broad job categories. To make sure you have found the BEST code, please review ALL broad categories before making your choice. If you cannot find the code that BEST describes your job, use the “OTHER” code under the most appropriate broad category in bold print. If none of the codes fit your job, use Code 500.

010 <b>Artists, Broadcasters, Editors, Entertainers, Public Relations Specialists, Writers</b>	*** Engineers (continued)
	086 Civil, including architectural & sanitary
	087 Computer engineer - hardware
	088 Computer engineer - software
	089 Electrical, electronic
	090 Environmental
	091 Industrial
	092 Marine engineer or naval architect
	093 Materials or metallurgical
	094 Mechanical
	095 Mining or geological
	096 Nuclear
	097 Petroleum
	098 Sales
	099 Other engineers
<b>Biological/Life Scientists</b>	*** Engineering Technologists and Technicians
021 Agricultural and food scientists	100 Electrical, electronic, industrial, mechanical
022 Biochemists and biophysicists	101 Drafting occupations, including computer drafting
023 Biological scientists (e.g., botanists, ecologists, zoologists)	102 Surveying and mapping
024 Forestry, conservation scientists	103 OTHER engineering technologists and technicians
025 Medical scientists (excluding practitioners)	
026 Technologists & technicians in the biological/life sciences	
027 OTHER biological/life scientists	
<b>Clerical/Administrative Support</b>	
031 Accounting clerks, bookkeepers	
032 Secretaries, receptionists, typists	
033 OTHER administrative (e.g., record clerks, telephone operators)	
040 <b>Clergy &amp; Other Religious Workers</b>	
<b>Computer Occupations</b> (Also see 173)	
*** Computer engineers (See 087, 088 under Engineering)	
051 Computer programmers (business, scientific, process control)	104 <b>Surveyors</b>
052 Computer system analysts	110 <b>Farmers, Foresters &amp; Fishermen</b>
053 Computer scientists, except system analysts	<b>Health Occupations</b>
054 Information systems scientists or analysts	111 Diagnosing/Treating Practitioners (e.g., dentists, optometrists, physicians, psychiatrists, podiatrists, surgeons, veterinarians)
055 OTHER computer, information science occupations	112 Registered nurses, pharmacists, dieticians, therapists, physician assistants
*** <b>Consultants</b> (select the code that comes closest to your usual area of consulting)	113 Health Technologists & Technicians (e.g., dental hygienists, health record technologist/technicians, licensed practical nurses, medical or laboratory technicians, radiologic technologists/technicians)
070 <b>Counselors, Educational &amp; Vocational</b> (Also see 236)	114 OTHER health occupations
<b>Engineers, Architects, Surveyors</b>	120 <b>Lawyers, Judges</b>
081 Architects	130 <b>Librarians, Archivists, Curators</b>
*** Engineers (Also see 100-103)	
082 Aeronautical, aerospace, astronautical	
083 Agricultural	
084 Bioengineering & biomedical	
085 Chemical	

## EXHIBIT 3. LIST B: JOB CODES (CONTINUED)

### **Managers, Executives, Administrators** (Also see 151-153)

- 141 Top and mid-level managers, executives, administrators (people who manage other managers)
- \*\*\* All other managers, including the self-employed - *Use the code that comes closest to the field you manage*

### **Management-Related Occupations** (Also see 141)

- 151 Accountants, auditors, and other financial specialists
- 152 Personnel, training, and labor relations specialists
- 153 OTHER management related occupations

### **Mathematical Scientists**

- 171 Actuaries
- 172 Mathematicians
- 173 Operations research analysts, modeling
- 174 Statisticians
- 175 Technologists and technicians in the mathematical sciences
- 176 OTHER mathematical scientists

### **Physical Scientists**

- 191 Astronomers
- 192 Atmospheric and space scientists
- 193 Chemists, except biochemists
- 194 Geologists, including earth scientists
- 195 Oceanographers
- 196 Physicists
- 197 Technologists and technicians in the physical sciences
- 198 OTHER physical scientists

### **\*\*\*Research Associates/Assistants**

*(Select the code that comes closest to your field)*

### **Sales and Marketing**

- 200 Insurance, securities, real estate, & business services
- 201 Sales Occupations - Commodities Except Retail (e.g., industrial machinery/equipment/supplies, medical and dental equip/supplies)
- 202 Sales Occupations - Retail (e.g., furnishings, clothing, motor vehicles, cosmetics)
- 203 OTHER marketing and sales occupations

### **Service Occupations, Except Health** (Also see 111-114)

- 221 Food Preparation and Service (e.g., cooks, waitresses, bartenders)
- 222 Protective services (e.g., fire fighters, police, guards)
- 223 OTHER service occupations, except health

### **Social Scientists**

- 231 Anthropologists
- 232 Economists
- 233 Historians, science and technology
- 234 Historians, except science and technology
- 235 Political scientists
- 236 Psychologists, including clinical (Also see 070)
- 237 Sociologists
- 238 OTHER social scientist

### **240 Social Workers**

### **Teachers/Professors**

- 251 Pre-Kindergarten and kindergarten
- 252 Elementary
- 253 Secondary - computer, math, or sciences
- 254 Secondary - social sciences
- 255 Secondary - other subjects
- 256 Special education - primary and secondary
- 257 OTHER precollegiate area

### **\*\*\* Postsecondary**

- 271 Agriculture
- 272 Art, Drama, and Music
- 273 Biological Sciences
- 274 Business Commerce and Marketing
- 275 Chemistry
- 276 Computer Science
- 277 Earth, Environmental, and Marine Science
- 278 Economics
- 279 Education
- 280 Engineering
- 281 English
- 282 Foreign Language
- 283 History
- 284 Home Economics
- 285 Law
- 286 Mathematical Sciences
- 287 Medical Science

## EXHIBIT 3. LIST B: JOB CODES (CONTINUED)

### \*\*\* Postsecondary (continued)

- 288 Physical Education
- 289 Physics
- 290 Political Science
- 291 Psychology
- 292 Social Work
- 293 Sociology
- 294 Theology
- 295 Trade and Industrial
- 296 OTHER health specialties
- 297 OTHER natural sciences
- 298 OTHER social sciences
- 299 OTHER Postsecondary

### Other Professions

- 401 Construction trades, miners & well drillers
- 402 Mechanics and repairers
- 403 Precision/production occupations  
(e.g., metal workers, woodworkers, butchers, bakers, printing occupations, tailors, shoemakers, photographic process)
- 404 Operators and related occupations  
(e.g., machine set-up, machine operators and tenders, fabricators, assemblers)
- 405 Transportation/material moving occupations
- 500 **Other Occupations (Not Listed)**



# EXHIBIT 4. NSF OCCUPATIONAL CODE CATEGORIES FOR TABULATIONS

- 1. Computer and information scientists**  
Computer and information scientists 052-055, 088  
Postsecondary teachers in computer sciences 276
- 2. Life and related scientists**  
Agricultural and food scientists 021  
Biological scientists 022, 023, 025, 027  
Environmental life scientists including forestry scientists 024  
Postsecondary teachers in life and related sciences 273, 271, 287, 297
- 3. Mathematical scientists**  
Mathematical scientists 172-174, 176  
Postsecondary teachers in mathematical sciences 286
- 4. Physical scientists**  
Chemists, except biochemists 193  
Earth scientists, geologists, and oceanographers 192, 194, 195  
Physicists and astronomers 191, 196  
Other physical scientists 198  
Postsecondary teachers in physical and related sciences 289, 277, 275
- 5. Psychologists**  
Psychologists 236  
Postsecondary teachers in psychology 291
- 6. Social and related scientists**  
Economists 232  
Political scientists 235  
Sociologists and anthropologists 231, 237  
Other social scientists 238, 233  
Postsecondary teachers in social and related sciences 278, 290, 293, 298
- 7. Engineers**  
Aerospace and related engineers 082  
Chemical engineers 085  
Civil and architectural engineers 086  
Electrical, electronic, computer, and communications engineers 087, 089  
Industrial engineers 091  
Mechanical engineers 094  
Other engineers 083, 084, 090, 092-093, 095-097, 099, 098  
Postsecondary teachers in engineering 280

## EXHIBIT 4. NSF OCCUPATIONAL CODE CATEGORIES FOR TABULATIONS (CONTINUED)

### 8. All other occupations (occupations other than S&E)

Managers and related occupations 141, 151-153

Health and related occupations, 111-114

Educators other than science and engineering postsecondary 253-254, 251, 252, 255-257, 272, 274, 279 281-285, 288, 292, 294-296, 299

Social services and related occupations 240, 070, 040

Technicians, including computer programmers 026, 175, 197, 100-104, 081, 051

Sales and marketing occupations 200-203

Other occupations 010, 031-033, 120, 130, 110, 500, 171, 234, 221-223, 401-405

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

# APPENDIX

## ELIGIBLE AND INELIGIBLE MAJORS: 1999

Categories & Fields	1999 NSF CODE	1990 CIP <sup>1</sup> CODE
<b>1. Computer, information, and mathematical sciences (Eligible)</b>		
11 COMPUTER & INFORMATION SCIENCES		
COMPUTER & INFORMATION SCIENCES, GENERAL	671	11.0101
COMPUTER SCIENCE	673	11.0701
COMPUTER SYSTEMS ANALYSIS	674	11.0501
INFORMATION SCIENCES & SYSTEMS	676	11.0401
COMPUTER & INFORMATION SCIENCES, OTHER	677	11.9999
12 MATHEMATICAL SCIENCES		
APPLIED MATHEMATICS, GENERAL	841	27.0301
APPLIED MATHEMATICS, OTHER	841	27.0399
MATHEMATICS	842	27.0101
OPERATIONS RESEARCH	843	27.0302
MATHEMATICAL STATISTICS	844	27.0501
MATHEMATICS, OTHER	845	27.9999
MATHEMATICS & COMPUTER SCIENCE	845	30.0801
<b>2. Life and related sciences (Eligible)</b>		
21 AGRICULTURAL & FOOD SCIENCES		
ANIMAL SCIENCES	605	02.0201-02.0299
FOOD SCIENCES & TECHNOLOGY	606	02.0301
PLANT SCIENCES	607	02.0401-02.0499
SOIL SCIENCE	608	02.0501
AGRICULTURAL SCIENCES, OTHER	608	02.9999
AGRICULTURAL SCIENCES, GENERAL	608	02.0101-02.0102
22 BIOLOGICAL SCIENCES		
BIOCHEMISTRY & BIOPHYSICS	631	26.0202-26.0203
BIOLOGY, GENERAL	632	26.0101
BOTANY	633	26.0301-26.0399
CELL & MOLECULAR BIOLOGY	634	26.0401-26.0499
ECOLOGY	635	26.0603
GENETICS, PLANT & ANIMAL	636	26.0613
MICROBIOLOGY/BACTERIOLOGY	637	26.0501
NUTRITIONAL SCIENCES	638	26.0609
PHARMACOLOGY, HUMAN & ANIMAL	639	26.0705
PHYSIOLOGY, HUMAN & ANIMAL	640	26.0706
ZOOLOGY, GENERAL	641	26.0701
ENTOMOLOGY	641	26.0702
PATHOLOGY, HUMAN & ANIMAL	641	26.0704

Categories & Fields	1999 NSF CODE	1990 CIP <sup>1</sup> CODE
ZOOLOGY, OTHER	641	26.0799
ANATOMY	642	26.0601
MARINE/AQUATIC BIOLOGY	642	26.0607
NEUROSCIENCE	642	26.0608
PARASITOLOGY	642	26.0610
RADIATION BIOLOGY/RADIOBIOLOGY	642	26.0611
TOXICOLOGY	642	26.0612
BIOMETRICS	642	26.0614
BIostatISTICS	642	26.0615
BIOTECHNOLOGY RESEARCH	642	26.0616
EVOLUTIONARY BIOLOGY	642	26.0617
BIOLOGICAL IMMUNOLOGY	642	26.0618
VIROLOGY	642	26.0619
MISC BIOLOGICAL SPECIALTIES, OTHER	642	26.0699
BIOLOGICAL SCIENCES, OTHER	642	26.9999
BIOLOGICAL & PHYSICAL SCIENCES	991	30.0101
SYSTEMS SCIENCE & THEORY	991	30.0601
23 ENVIRONMENTAL & FORESTRY SCIENCES		
ENVIRONMENTAL SCIENCE/STUDIES	680	03.0102
FORESTRY SCIENCES	681	03.0502
<b>3. Physical and related sciences (Eligible)</b>		
31 CHEMISTRY		
CHEMISTRY	873	40.0501-40.0599
32 EARTH SCIENCES, GEOLOGY, OCEANOGRAPHY		
ATMOSPHERIC SCI & METEOROLOGY	872	40.0401
EARTH & PLANETARY SCIENCES	874	40.0703
GEOLOGY	875	40.0601
GEOCHEMISTRY	876	40.0602
GEOPHYSICS & SEISMOLOGY	876	40.0603
PALEONTOLOGY	876	40.0604
GEOLOGICAL SCIENCES, OTHER	876	40.0699
OCEANOGRAPHY	877	40.0702
33 PHYSICS & ASTRONOMY		
ASTRONOMY	871	40.0201
ASTROPHYSICS	871	40.0301
PHYSICS	878	40.0801-40.0899
34 OTHER PHYSICAL SCIENCES		
PHYSICAL SCIENCES, GENERAL	879	40.0101
METALLURGY	879	40.0701
MISC PHYSICAL SCIENCES, OTHER	879	40.0799
PHYSICAL SCIENCES, OTHER	879	40.9999

Categories & Fields	1999 NSF CODE	1990 CIP <sup>1</sup> CODE
<b>4. Social sciences and related sciences (Eligible)</b>		
41 ECONOMICS		
AGRICULTURAL ECONOMICS	601	01.0103
ECONOMICS	923	45.0601-45.0699
42 POLITICAL & RELATED SCIENCES		
PUBLIC POLICY ANALYSIS	902	44.0501
INTERNATIONAL RELATIONS & AFFAIRS	927	45.0901
POLITICAL SCIENCE & GOVERNMENT	928	45.1001-45.1099
43 PSYCHOLOGY		
EDUCATIONAL PSYCHOLOGY	704	13.0802
CLINICAL PSYCHOLOGY	891	42.0201
COUNSELING PSYCHOLOGY	892	42.0601
EXPERIMENTAL PSYCHOLOGY	893	42.0801
PSYCHOLOGY, GENERAL	894	42.0101
INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY	895	42.0901
SOCIAL PSYCHOLOGY	896	42.1601
PSYCHOLOGY, OTHER	897	42.9999
COGNITIVE PSYCHOLOGY	897	42.0301
COMMUNITY PSYCHOLOGY	897	42.0401
DEVELOPMENTAL & CHILD PSYCHOLOGY	897	42.0701
PHYSIOLOGICAL PSYCHOLOGY	897	42.1101
SCHOOL PSYCHOLOGY	897	42.1701
BIOPSYCHOLOGY	897	30.1001
44 SOCIOLOGY & ANTHROPOLOGY		
ANTHROPOLOGY	921	45.0201
ARCHEOLOGY	921	45.0301
CRIMINOLOGY	922	45.0401
SOCIOLOGY	929	45.1101
45 OTHER SOCIAL SCIENCES		
AREA STUDIES	620	05.0101-05.0199
ETHNIC & CULTURAL STUDIES	620	05.0201-05.0299
AREA, ETHNIC, CULTURAL, OTHER	620	05.9999
LINGUISTICS	771	16.0102
PHILOSOPHY OF SCIENCE	861	45.0804 (PART)
GEOGRAPHY	924	45.0701-45.0702
HISTORY OF SCIENCE	925	45.0804 (PART)
URBAN AFFAIRS/STUDIES	930	45.1201
SOCIAL SCIENCES, OTHER	930	45.9999
SOCIAL SCIENCES, GENERAL	930	45.0101
DEMOGRAPHY/POPULATION STUDIES	930	45.0501
PEACE & CONFLICT STUDIES	930	30.0501
GERONTOLOGY	930	30.1101
SCIENCE, TECHNOLOGY, & SOCIETY	930	30.1501

Categories & Fields	1999 NSF CODE	1990 CIP <sup>1</sup> CODE
<b>5. Engineering (Eligible)</b>		
51 AERONAUTICAL & ASTRONAUTICAL ENGINEERING AERONAUTICAL & ASTRONAUTICAL ENGINEERING	721	14.0201
52 CHEMICAL ENGINEERING CHEMICAL ENGINEERING	725	14.0701
53 CIVIL & ARCHITECTURAL ENGINEERING CIVIL ENGINEERING	726	14.0801-14.0899
ARCHITECTURAL ENGINEERING	723	14.0401
54 ELECTRICAL & COMPUTER ENGINEERING COMPUTER ENGINEERING	727	14.0901
SYSTEMS ENGINEERING	727	14.2701
ELECTRICAL, ELECTRONICS, COMMUNICATIONS ENGINEERING	728	14.1001
55 INDUSTRIAL ENGINEERING INDUSTRIAL/MANUFACTURE ENGINEERING	733	14.1701
56 MECHANICAL ENGINEERING MECHANICAL ENGINEERING	735	14.1901
57 OTHER ENGINEERING AGRICULTURAL ENGINEERING	722	14.0301
BIOENGINEERING & BIOMEDICAL ENGINEERING	724	14.0501
ENGINEERING MECHANICS	729	14.1101
ENGINEERING PHYSICS	729	14.1201
ENGINEERING SCIENCE	729	14.1301
ENVIRONMENTAL ENGINEERING	730	14.1401
ENGINEERING, GENERAL	731	14.0101
GEOPHYSICAL ENGINEERING	732	14.1601
MATERIALS ENGINEERING	734	14.1801
CERAMIC SCIENCES & ENGINEERING	734	14.0601
TEXTILE SCIENCES & ENGINEERING	734	14.2801
POLYMER/PLASTICS ENGINEERING	734	14.3201
METALLURGICAL ENGINEERING	736	14.2001
MINING & MINERAL ENGINEERING	737	14.2101
NAVAL ARCHITECTURE & MARINE ENGINEERING	738	14.2201
NUCLEAR ENGINEERING	739	14.2301
PETROLEUM ENGINEERING	740	14.2501
ENGINEERING DESIGN	741	14.2901
ENGINEERING/INDUSTRIAL MANAGEMENT	741	14.3001
MATERIALS SCIENCE	741	14.3101
GEOLOGICAL ENGINEERING	741	14.1501
OCEAN ENGINEERING	741	14.2401
ENGINEERING, OTHER	741	14.9999

Categories & Fields	1999 NSF CODE	1990 CIP <sup>1</sup> CODE
<b>6. Non-Science and Non-Engineering fields (Not Eligible)</b>		
OTHER, AGRI-BUSINESS & MANAGEMENT	602	01.0101-01.0102
OTHER, AGRI-BUSINESS & MANAGEMENT	602	01.0104-01.9999
ARCHITECTURE	610	ALL 04
BUSINESS MANAGEMENT	651-659	ALL 08, ALL 52
COMMUNICATIONS	661-663	ALL 09
COMPUTER PROGRAMMING	672	11.0201
DATA PROCESSING TECHNOLOGY	675	11.0301
OTHER, CONSERVATION	682	03.0101
OTHER, CONSERVATION	682	03.0201-03.0501
OTHER, CONSERVATION	682	03.0506-03.9999
CRIMINAL JUSTICE/PROTECT SERVICES	690	ALL 43
EDUCATION	701-703	ALL 13 EXCEPT 13.0802
EDUCATION	705-713	ALL 13 EXCEPT 13.0802
ENGINEERING-RELATED TECHNOLOGIES	751-754	ALL 15
ENGINEERING-RELATED TECHNOLOGIES	751-754	48.0101-48.0199
ENGLISH LANGUAGE, LITERATURE	760	ALL 23
OTHER, FOREIGN LANGUAGE	772	16.0101
OTHER, FOREIGN LANGUAGE	772	16.0103-16.9999
HEALTH PROFESSIONS	781-791	ALL 51
HOME ECONOMICS	800	ALL 19, ALL 20
LAW/PRELAW/LEGAL STUDIES	810	ALL 22
LIBERAL ARTS	820	ALL 24
LIBRARY SCIENCE	830	ALL 25
PARKS, RECREATION, LEISURE	850	ALL 31
OTHER, PHILOSOPHY, RELIGION	862	ALL 38, ALL 39
PUBLIC ADMINISTRATION	901	44.0401
OTHER, PUBLIC AFFAIRS	903	44.0201,44.9999
SOCIAL WORK	910	44.0701
HISTORY, OTHER	926	45.0801-45.0803
HISTORY, OTHER	926	45.0805-45.0899
VISUAL & PERFORMING ARTS	941-944	ALL 50
OTHER FIELDS	995	ALL 10, ALL 12
OTHER FIELDS	995	29.0101
OTHER FIELDS	995	30.1201
OTHER FIELDS	995	30.1301
OTHER FIELDS	995	30.1401
OTHER FIELDS	995	30.9999
OTHER FIELDS	995	ALL 32 THRU 37
OTHER FIELDS	995	ALL 41, ALL 46, ALL 47
OTHER FIELDS	995	48.0201-48.9999
OTHER FIELDS	995	ALL 49

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<sup>1</sup> Classification of Instructional Programs



SECTION B.  
DETAILED STATISTICAL TABLES



## SECTION B. DETAILED STATISTICAL TABLES

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# HIGHLIGHTS

## Characteristics of 1997 and 1998 Bachelor's and Master's Degree Recipients

- ◆ In 1997 and 1998, about 743,000 persons earned bachelor's degrees in the sciences and engineering (S&E) from U.S. colleges and universities, and about 157,000 persons earned S&E master's degrees (tables A-1 and A-2).
- ◆ Among 1997 and 1998 bachelor's S&E degree recipients, slightly more than half were females. Almost three-fourths of computer and information science baccalaureates were male, and about four-fifths of engineering baccalaureates were male. Over three-fourths of psychology baccalaureates were female (table A-1).
- ◆ About 58 percent of S&E master's degree recipients were male and 42 percent were female (table A-2). Again, males earned a much higher proportion of the master's degrees in computer and information sciences and engineering, while females earned a much higher proportion of the master's degrees in psychology.
- ◆ Black and Hispanic graduates each represented about 7 percent of 1997 and 1998 S&E baccalaureates, and Asians and Pacific Islanders represented 10 percent. About 1 percent of S&E baccalaureates were American Indian or Alaskan Native (table A-1).
- ◆ Underrepresented minorities, including Black, Hispanic, and American Indian or Alaskan Native graduates represented 11 percent of 1997 and 1998 master's degree recipients. Asians and Pacific Islanders represented 23 percent (over twice their representation among baccalaureates). (table A-2).
- ◆ In 1999, about 59 percent of recent S&E bachelor's degree recipients were less than 25 years old, and 28 percent were age 25 to age 29. Only 13 percent were age 30 or over (table A-5). Among master's graduates, the modal age group was age 25–29, representing 47 percent of 1997 and 1998 master's degree recipients. About 23 percent were age 30–34, and another 25 percent were age 35 or over (table A-6).
- ◆ About 95 percent of 1997 and 1998 S&E baccalaureates were U.S. citizens (table A-7). However, among master's degree recipients, a

smaller percentage, 77 percent, were U.S. citizens (table A-8).

## Educational Characteristics of 1997 and 1998 Bachelor's and Master's Degree Recipients

- ◆ About half of recent S&E bachelor's degree recipients (52 percent) and two-thirds of master's degree recipients (66 percent) reported undergraduate GPAs of 3.25 or higher (tables B-1 and B-2).
- ◆ About 316,000, or 43 percent, of the 743,000 recent baccalaureates in S&E reported that they had attended community colleges, and about 104,000, or 14 percent, had earned associate's degrees (table B-3). Among master's degree recipients, 35 percent (55,000) reported attending community colleges, and about 10 percent (16,000) had associate's degrees (table B-4).
- ◆ Sources of financial support for 1997 and 1998 bachelor's degrees in S&E were quite varied (table B-5). More than half of graduates reported using earnings from employment; gifts from parents or relatives; scholarships, grants, or fellowships; and loans from colleges, banks, or government. About 28 percent of baccalaureates reported assistantships or work study as sources of college funds. About 8 percent reported employer assistance, 8 percent reported loans from parents or relatives, and 2 percent reported other sources of support.
- ◆ More than half of master's degree recipients reported earnings from employment and from scholarships, grants, or fellowships as sources of support, and nearly half reported assistantships or work study (table B-6). About 35 percent reported loans from colleges, banks, or government. Gifts from parents or relatives were another important source of support, reported by about 34 percent of master's graduates. Compared to baccalaureates, a much larger percentage of master's degree recipients reported employer support (27 percent).
- ◆ Nearly half of all bachelor's degree recipients (48 percent) borrowed \$10,000 or more for their undergraduate educations, and 37 percent of all bachelor's degree recipients owed \$10,000 or more as of April 15, 1999 (tables B-7 and B-9).

- ◆ Among master's graduates, 43 percent borrowed \$10,000 or more for their under-graduate and graduate degrees, and 29 percent owed \$10,000 or more as of April 15, 1999 (tables B-8 and B-10).
- ◆ About 45 percent of 1997 and 1998 S&E bachelor's degree recipients reported that they had taken additional courses since earning their most recent degree (that is, the most recent degree as of the survey reference week of April 15, 1999). About 22 percent of all bachelor's degree recipients were full-time students during the survey reference week (table B-11).
- ◆ About 39 percent of 1997 and 1998 master's degree recipients had taken courses since their most recent degree; 20 percent of master's degree recipients were full-time students during the survey reference week (table B-12).
- ◆ Among those baccalaureates who had not taken additional courses since their most recent degrees, 68 percent reported that it was very likely that they would do so in the future (table B-13). About 52 percent of master's graduates who had not taken courses reported that it was very likely that they would do so (table B-14).
- ◆ Only 7 percent of recent S&E bachelor's degree recipients reported that they expected a bachelor's degree to be their highest degree (table B-17). About 54 percent reported that they expected their highest degree to be a master's degree, 26 percent expected their highest degree to be a doctorate, and about 12 percent expected to earn a professional degree.
- ◆ More than half of recent S&E master's graduates (56 percent) expected to earn a doctorate as their highest degree, and a small percentage (about 4 percent) expected to earn a professional degree as their highest degree (table B-18).

### **Employment Status of 1997 and 1998 Bachelor's and Master's Degree Recipients**

- ◆ About 626,000 (84 percent) recent S&E bachelor's degree recipients were employed in April 1999. Of these, 537,000 were employed full time when all jobs are considered, and 527,000 were employed full time when only the principal job is considered (table C-1). About 4 percent of bachelor's graduates were unemployed (that is, not working and looking for work or on layoff from a job). About 12 percent of

recent bachelor's degree recipients were not in the labor force (that is, neither working nor looking for work) (table C-3).

- ◆ About 139,000 master's degree recipients (89 percent) were employed. When counting all jobs, 123,000 were employed full time; 121,000 were employed full time when only the principal job was considered (table C-2). About 2 percent of master's graduates were unemployed, and about 9 percent were not in the labor force (table C-4).

### **Occupational Characteristics of 1997 and 1998 Bachelor's and Master's Degree Recipients**

- ◆ About 68 percent of employed 1997 and 1998 S&E bachelor's degree recipients had non-S&E jobs in April 1999 (table D-1). Those with degrees in the sciences were far more likely than those with degrees in engineering to be employed in non-S&E fields (79 percent versus 18 percent). In contrast, only 36 percent of employed master's degree recipients were in non-S&E jobs; 46 percent of those with degrees in the sciences, and 13 percent of those with degrees in engineering (table D-2).
- ◆ Female recipients of S&E baccalaureates were more likely than males to hold non-S&E jobs (79 percent of employed females and 58 percent of employed males) (table D-7). Similarly, higher percentages of employed female master's degree recipients held non-S&E jobs than did their male counterparts (50 percent versus 26 percent) (table D-8). This may reflect the fact that women are more likely to earn social science degrees where the proportion of non-S&E jobs is very high (90 percent; table D-1) and men are more likely to earn engineering degrees where the proportion of non-S&E jobs is low (18 percent).
- ◆ About half of the S&E bachelor's degree recipients reported that they had career path jobs. One-third of those without career path jobs reported that they were seeking such positions (table D-3). About two-thirds of S&E master's degree recipients reported holding career path jobs; of those who did not, 30 percent reported that they were seeking career path jobs (table D-4).
- ◆ About 43 percent of employed S&E bachelor's graduates reported that their jobs were closely related

to the field of their degrees, and another 30 percent reported that they were somewhat related (table D-5). A greater proportion of master's degree recipients, 69 percent, reported holding jobs closely related to their degree fields, and another 22 percent reported jobs somewhat related to their degrees (table D-6).

- ◆ Among employed S&E bachelor's degree graduates, the most commonly reported primary work activity was management, sales, and administration, reported by 34 percent of baccalaureates (table D-11). Research and development (R&D) was reported by 20 percent of graduates and computer applications by 15 percent. About 12 percent of baccalaureate graduates reported teaching as their primary activity.
- ◆ The pattern of primary work activities was rather different for master's degree recipients (table D-12). R&D was the most commonly reported primary work activity (32 percent of employed master's graduates), followed by computer applications (21 percent) and management, sales, and administration (20 percent). About 10 percent of master's graduates reported teaching as their primary activity.
- ◆ Large percentages of employed bachelor's and master's degree recipients reported participating in work-related training in the past year. The most common form of training for both degree levels was technical training in their occupational fields, reported by 55 percent of employed bachelor's graduates and 62 percent of employed master's graduates. Fewer graduates received management training, general professional training, or other training (tables D-13 and D-14).

### **Employer Characteristics of 1997 and 1998 Bachelor's and Master's Degree Recipients**

- ◆ About 67 percent of employed recent S&E bachelor's degree recipients worked in the private sector (excluding educational institutions) in April 1999 (table E-1). About 22 percent of the employed graduates worked in the education sector and 10 percent in government.
- ◆ Among employed recent S&E master's degree recipients, the distribution across sectors was somewhat different—specifically, a greater proportion (27 percent) were employed in the education sector (table E-2). About 61 percent of recent master's degree graduates who were employed worked in the private sector

(excluding educational institutions), and 12 percent worked in government.

### **Salaries of 1997 and 1998 Bachelor's and Master's Degree Recipients**

- ◆ Recent bachelor's degree recipients in S&E fields who were employed full time and were not full-time students had a median annual salary of about \$30,000 as of April 1999 (table F-1). The median salary was higher for those with engineering degrees (\$42,500) than for those with degrees in the sciences (\$27,900).
- ◆ The median annual salary for recent master's degree recipients who were employed full time and were not full-time students was \$46,000 in April 1999 (table F-2). Again, the median annual salary for those with engineering degrees was higher than for those in the sciences (\$55,000 versus \$40,000).
- ◆ At both the bachelor's and master's levels, male graduates had higher median salaries than female graduates—\$35,000 versus \$26,600 at the bachelor's level and \$50,200 versus \$38,000 at the master's level. This overall difference primarily reflects two factors: (1) disparities in salaries between males and females with degrees in the sciences and (2) a much higher proportion of males majoring in engineering, where the median salary was higher. Within engineering, males and females had more similar salaries, especially at the bachelor's degree level.
- ◆ Comparisons by occupational field reveal that, among bachelor's graduates, those with S&E jobs had higher salaries than those with non-S&E jobs (table F-3). The median salary was \$38,000 for scientists, \$42,000 for engineers, and \$26,500 for other occupations. In the sciences and in non-S&E occupations, males earned higher salaries than females, on average; this was not observed among engineers. Differences by occupational field were similar for master's degree recipients, although salaries were higher (table F-4).
- ◆ Baccalaureate graduates employed in private industry earned more, on average (\$33,000), than those in the education sector (\$24,000) or those in government (\$27,000) (table F-5). This was also true for master's degree recipients, with those employed in private industry earning a median salary of \$50,000, those in the education sector earning \$33,000, and those in government earning \$40,000 (table F-6).

# TABLES

**Table S-1. Primary education and employment status, and median salary of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Primary education and employment status				Median salary for full-time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	743,400	165,500	161,900	377,300	38,800	\$30,000
Total science.....	628,800	150,800	83,100	359,300	35,500	27,900
Computer and information sciences.....	46,000	S	27,000	15,100	S	44,000
Life and related sciences, total.....	164,000	54,300	20,900	79,100	9,800	25,000
Agricultural and food sciences.....	15,700	3,200	S	10,000	S	26,500
Biological sciences.....	134,900	48,800	16,200	62,000	7,800	25,000
Environmental life sciences including forestry science.....	13,500	2,300	3,000	7,100	S	26,000
Mathematical and related sciences.....	23,700	4,800	3,900	13,900	S	30,000
Physical and related sciences, total.....	36,500	12,600	11,100	11,900	1,000	28,500
Chemistry, except biochemistry.....	20,100	7,900	6,300	5,500	S	28,500
Earth sciences, geology, and oceanography.....	8,700	1,900	2,500	4,000	S	26,000
Physics and astronomy.....	7,200	2,600	2,200	2,200	S	35,400
Other physical sciences.....	600	S	S	S	S	S
Psychology.....	146,700	34,400	7,300	95,200	9,800	25,000
Social and related sciences, total.....	211,800	42,400	13,000	144,100	12,300	27,900
Economics.....	32,700	4,900	3,300	22,600	S	35,000
Political science and related sciences.....	71,700	20,500	4,100	42,300	4,700	29,000
Sociology and anthropology.....	69,500	11,700	S	51,600	S	24,500
Other social sciences.....	37,900	5,300	S	27,600	2,800	26,000
Total engineering.....	114,600	14,600	78,700	18,000	3,300	42,500
Aerospace and related engineering.....	2,400	500	1,300	500	S	41,000
Chemical engineering.....	12,400	1,900	8,500	1,600	S	45,000
Civil and architectural engineering.....	20,200	2,500	14,200	2,800	S	37,000
Electrical, electronic, computer and communications engineering.....	34,200	4,000	25,500	4,200	S	46,000
Industrial engineering.....	6,000	400	3,700	1,500	S	41,000
Mechanical engineering.....	26,300	2,600	18,500	4,600	S	43,000
Other engineering.....	13,200	2,700	7,200	2,800	S	40,000

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>2</sup> Salary data are for principal jobs only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table S-2. Primary education and employment status, and median salary of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Primary education and employment status				Median salary for full-time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	157,000	32,100	71,800	46,300	6,800	\$46,000
Total science.....	110,400	24,300	39,400	41,200	5,500	40,000
Computer and information sciences.....	20,000	1,600	14,200	3,700	S	58,000
Life and related sciences, total.....	16,600	4,900	5,000	6,000	S	34,000
Agricultural and food sciences.....	2,300	S	S	S	S	34,500
Biological sciences.....	11,600	4,300	3,400	3,600	S	34,000
Environmental life sciences including forestry science.....	2,600	S	S	1,400	S	36,000
Mathematical and related sciences.....	7,200	1,800	3,200	1,700	S	44,000
Physical and related sciences, total.....	9,100	2,900	4,100	1,600	S	41,600
Chemistry, except biochemistry.....	3,700	1,200	1,700	S	S	43,000
Earth sciences, geology, and oceanography.....	3,000	600	1,600	600	S	37,000
Physics and astronomy.....	2,300	1,100	800	S	S	40,000
Other physical sciences.....	S	S	S	S	S	S
Psychology.....	30,000	6,900	7,700	13,200	2,200	32,000
Social and related sciences, total.....	27,500	6,200	5,100	14,900	1,300	40,000
Economics.....	4,300	1,300	S	1,600	S	45,000
Political science and related sciences.....	9,400	1,900	1,600	5,600	S	40,000
Sociology and anthropology.....	4,300	1,400	S	1,700	S	31,200
Other social sciences.....	9,500	1,500	S	6,100	S	38,000
Total engineering.....	46,700	7,900	32,500	5,100	1,300	55,000
Aerospace and related engineering.....	1,500	400	800	S	S	50,000
Chemical engineering.....	2,300	500	1,400	S	S	55,000
Civil and architectural engineering.....	6,600	S	4,700	S	S	45,000
Electrical, electronic, computer and communications engineering.....	16,300	2,400	12,500	1,000	S	60,000
Industrial engineering.....	3,600	S	2,400	S	S	55,000
Mechanical engineering.....	6,800	1,100	4,900	S	S	51,000
Other engineering.....	9,600	2,000	5,700	1,600	S	52,000

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>2</sup> Salary data are for principal jobs only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table S-3. Primary education and employment status, and median salary of science and engineering bachelor's degree recipients in 1997 and 1998, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Primary education and employment status				Median salary for full-time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	743,400	165,500	161,900	377,300	38,800	\$30,000
Total science.....	628,800	150,800	83,100	359,300	35,500	27,900
Male.....	274,800	66,900	48,500	147,900	11,400	30,000
Female.....	354,000	83,900	34,600	211,400	24,200	26,000
Computer and information sciences.....	46,000	S	27,000	15,100	S	44,000
Male.....	34,200	S	20,600	10,400	S	45,000
Female.....	11,800	S	6,500	4,600	S	41,000
Life and related sciences.....	164,000	54,300	20,900	79,100	9,800	25,000
Male.....	73,000	25,000	9,000	36,000	2,900	26,500
Female.....	91,100	29,300	11,800	43,100	6,900	25,000
Mathematical and related sciences.....	23,700	4,800	3,900	13,900	S	30,000
Male.....	12,600	2,800	2,000	7,400	S	29,000
Female.....	11,100	2,000	1,900	6,500	S	30,000
Physical and related sciences.....	36,500	12,600	11,100	11,900	1,000	28,500
Male.....	22,500	7,500	7,400	7,000	S	30,000
Female.....	14,100	5,100	3,600	4,900	S	27,500
Psychology.....	146,700	34,400	7,300	95,200	9,800	25,000
Male.....	34,200	10,300	S	20,100	S	27,000
Female.....	112,500	24,100	4,900	75,100	8,400	25,000
Social and related sciences.....	211,800	42,400	13,000	144,100	12,300	27,900
Male.....	98,300	19,100	7,100	67,000	5,100	30,000
Female.....	113,400	23,300	5,900	77,100	7,200	26,000
Total engineering.....	114,600	14,600	78,700	18,000	3,300	42,500
Male.....	92,000	10,900	64,400	14,400	2,300	43,000
Female.....	22,600	3,700	14,400	3,600	900	42,000
Aerospace and related engineering.....	2,400	500	1,300	500	S	41,000
Male.....	2,100	400	1,100	400	S	40,200
Female.....	300	S	200	S	S	42,000
Chemical engineering.....	12,400	1,900	8,500	1,600	S	45,000
Male.....	7,300	900	5,300	800	S	45,000
Female.....	5,100	900	3,200	700	S	46,000
Civil and architectural engineering.....	20,200	2,500	14,200	2,800	S	37,000
Male.....	15,100	1,800	10,600	2,200	S	37,000
Female.....	5,100	S	3,500	S	S	37,000
Electrical, electronic, computer and communications engineering.....	34,200	4,000	25,500	4,200	S	46,000
Male.....	30,500	3,100	23,100	3,800	S	46,000
Female.....	3,700	S	2,400	S	S	47,000
Industrial engineering.....	6,000	400	3,700	1,500	S	41,000
Male.....	4,000	S	2,300	1,200	S	41,000
Female.....	2,000	S	1,400	S	S	42,000
Mechanical engineering.....	26,300	2,600	18,500	4,600	S	43,000
Male.....	23,000	2,300	16,600	3,700	S	43,000
Female.....	3,300	S	1,900	S	S	44,000
Other engineering.....	13,200	2,700	7,200	2,800	S	40,000
Male.....	10,100	2,200	5,400	2,300	S	40,000
Female.....	3,100	S	1,800	S	S	40,000

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

**Table S-4. Primary education and employment status, and median salary of science and engineering master's degree recipients in 1997 and 1998, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Primary education and employment status				Median salary for full time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	157,000	32,100	71,800	46,300	6,800	\$46,000
Total science.....	110,400	24,300	39,400	41,200	5,500	40,000
Male.....	53,600	13,900	22,700	15,000	2,000	46,000
Female.....	56,800	10,400	16,700	26,200	3,500	36,000
Computer and information sciences.....	20,000	1,600	14,200	3,700	S	58,000
Male.....	14,300	1,300	10,300	2,500	S	60,000
Female.....	5,600	S	3,900	1,300	S	55,000
Life and related sciences.....	16,600	4,900	5,000	6,000	S	34,000
Male.....	9,100	3,600	2,500	2,700	S	36,000
Female.....	7,500	1,400	2,500	3,300	S	33,000
Mathematical and related sciences.....	7,200	1,800	3,200	1,700	S	44,000
Male.....	4,200	1,200	1,700	S	S	44,000
Female.....	3,100	S	1,500	S	S	44,000
Physical and related sciences.....	9,100	2,900	4,100	1,600	S	41,600
Male.....	5,800	2,100	2,900	700	S	42,000
Female.....	3,200	800	1,200	900	S	40,000
Psychology.....	30,000	6,900	7,700	13,200	2,200	32,000
Male.....	7,700	2,500	2,100	2,500	S	33,000
Female.....	22,300	4,300	5,600	10,700	1,700	31,000
Social and related sciences.....	27,500	6,200	5,100	14,900	1,300	40,000
Male.....	12,400	3,300	3,200	5,700	S	41,000
Female.....	15,100	3,000	1,900	9,200	S	37,000
Total engineering.....	46,700	7,900	32,500	5,100	1,300	55,000
Male.....	38,100	6,500	27,100	3,900	700	55,000
Female.....	8,500	1,400	5,400	1,200	S	50,000
Aerospace and related engineering.....	1,500	400	800	S	S	50,000
Male.....	1,300	S	700	S	S	50,000
Female.....	S	S	S	S	S	S
Chemical engineering.....	2,300	500	1,400	S	S	55,000
Male.....	1,600	S	1,000	S	S	55,200
Female.....	600	S	S	S	S	50,000
Civil and architectural engineering.....	6,600	S	4,700	S	S	45,000
Male.....	5,000	S	3,800	S	S	45,000
Female.....	1,600	S	900	S	S	43,000
Electrical, electronic, computer and communications engineering.....	16,300	2,400	12,500	1,000	S	60,000
Male.....	14,000	2,200	10,700	S	S	60,000
Female.....	2,400	S	1,800	S	S	60,000
Industrial engineering.....	3,600	S	2,400	S	S	55,000
Male.....	3,000	S	2,100	S	S	56,000
Female.....	600	S	S	S	S	48,000
Mechanical engineering.....	6,800	1,100	4,900	S	S	51,000
Male.....	6,100	1,000	4,400	S	S	51,000
Female.....	700	S	S	S	S	S
Other engineering.....	9,600	2,000	5,700	1,600	S	52,000
Male.....	7,200	1,500	4,500	1,200	S	53,500
Female.....	2,400	500	1,200	400	S	48,000

**Table S-5. Primary education and employment status, and median salary of science and engineering bachelor's degree recipients in 1997 and 1998, by race/ethnicity and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Primary education and employment status				Median salary for full-time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	743,400	165,500	161,900	377,300	38,800	\$30,000
Total science.....	628,800	150,800	83,100	359,300	35,500	27,900
White, non-Hispanic.....	478,100	112,600	60,200	280,600	24,800	27,000
Asian or Pacific Islander.....	54,300	15,500	11,400	23,600	3,700	32,500
Underrepresented minority.....	96,400	22,800	11,500	55,100	7,100	27,900
Computer and information sciences.....	46,000	S	27,000	15,100	S	44,000
White, non-Hispanic.....	30,400	S	18,400	9,500	S	44,000
Asian or Pacific Islander.....	6,900	S	3,800	S	S	44,000
Underrepresented minority.....	8,700	S	4,900	2,900	S	42,000
Life and related sciences.....	164,000	54,300	20,900	79,100	9,800	25,000
White, non-Hispanic.....	123,300	37,900	15,500	63,700	6,200	25,000
Asian or Pacific Islander.....	21,200	9,700	S	6,400	S	28,000
Underrepresented minority.....	19,600	6,700	2,200	9,100	1,600	25,000
Mathematical and related sciences.....	23,700	4,800	3,900	13,900	S	30,000
White, non-Hispanic.....	18,800	3,800	3,000	11,300	S	29,000
Asian or Pacific Islander.....	2,300	S	S	S	S	S
Underrepresented minority.....	2,600	S	S	1,600	S	30,000
Physical and related sciences.....	36,500	12,600	11,100	11,900	1,000	28,500
White, non-Hispanic.....	29,800	10,000	9,100	9,900	800	28,000
Asian or Pacific Islander.....	2,900	1,400	S	S	S	31,000
Underrepresented minority.....	3,900	1,200	1,000	1,600	S	28,900
Psychology.....	146,700	34,400	7,300	95,200	9,800	25,000
White, non-Hispanic.....	115,600	26,700	5,300	76,900	6,800	25,000
Asian or Pacific Islander.....	6,000	S	S	S	S	S
Underrepresented minority.....	25,000	6,400	S	15,100	2,500	25,000
Social and related sciences.....	211,800	42,400	13,000	144,100	12,300	27,900
White, non-Hispanic.....	160,200	33,100	9,000	109,400	8,800	27,000
Asian or Pacific Islander.....	15,000	S	S	9,900	S	33,000
Underrepresented minority.....	36,600	7,400	1,800	24,800	2,600	27,600
Total engineering.....	114,600	14,600	78,700	18,000	3,300	42,500
White, non-Hispanic.....	83,100	9,400	59,700	12,000	2,100	42,000
Asian or Pacific Islander.....	17,300	3,900	10,300	2,500	S	45,000
Underrepresented minority.....	14,200	1,300	8,800	3,600	500	41,000

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>2</sup> Salary data are for principal jobs only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

The underrepresented minority category includes Black, Hispanic, and American Indian or Alaskan Native.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table S-6. Primary education and employment status, and median salary of science and engineering master's degree recipients in 1997 and 1998, by race/ethnicity and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Primary education and employment status				Median salary for full-time employed <sup>2</sup>
		Full-time student	Not full-time student			
			Employed in science and engineering <sup>1</sup>	Employed in other occupation	Not employed & not full-time student	
All science and engineering fields.....	157,000	32,100	71,800	46,300	6,800	\$46,000
Total science.....	110,400	24,300	39,400	41,200	5,500	40,000
White, non-Hispanic.....	77,200	17,300	24,800	30,700	4,300	38,000
Asian or Pacific Islander.....	20,000	4,400	10,900	4,100	S	54,000
Underrepresented minority.....	13,200	2,600	3,600	6,400	S	38,000
Computer and information sciences.....	20,000	1,600	14,200	3,700	S	58,000
White, non-Hispanic.....	8,300	S	5,500	1,600	S	60,000
Asian or Pacific Islander.....	10,400	S	7,900	2,000	S	57,000
Underrepresented minority.....	1,300	S	800	S	S	60,000
Life and related sciences.....	16,600	4,900	5,000	6,000	S	34,000
White, non-Hispanic.....	12,200	3,000	4,000	4,800	S	35,000
Asian or Pacific Islander.....	3,000	1,700	S	S	S	S
Underrepresented minority.....	1,300	S	S	600	S	33,500
Mathematical and related sciences.....	7,200	1,800	3,200	1,700	S	44,000
White, non-Hispanic.....	4,900	1,200	1,800	1,500	S	40,000
Asian or Pacific Islander.....	1,600	S	S	S	S	S
Underrepresented minority.....	700	S	S	S	S	39,000
Physical and related sciences.....	9,100	2,900	4,100	1,600	S	41,600
White, non-Hispanic.....	6,500	2,000	3,000	1,300	S	40,000
Asian or Pacific Islander.....	1,800	800	S	S	S	47,000
Underrepresented minority.....	700	S	300	S	S	34,000
Psychology.....	30,000	6,900	7,700	13,200	2,200	32,000
White, non-Hispanic.....	24,300	5,500	6,500	10,500	S	32,000
Asian or Pacific Islander.....	S	S	S	S	S	S
Underrepresented minority.....	4,800	S	900	2,600	S	34,000
Social and related sciences.....	27,500	6,200	5,100	14,900	1,300	40,000
White, non-Hispanic.....	20,900	4,700	4,000	11,100	S	40,000
Asian or Pacific Islander.....	2,200	S	S	S	S	S
Underrepresented minority.....	4,400	1,000	S	2,600	S	38,000
Total engineering.....	46,700	7,900	32,500	5,100	1,300	55,000
White, non-Hispanic.....	27,200	4,000	19,600	3,200	S	54,000
Asian or Pacific Islander.....	15,800	3,100	10,400	1,400	S	57,000
Underrepresented minority.....	3,700	700	2,400	500	S	50,000

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>2</sup> Salary data are for principal jobs only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

The underrepresented minority category includes Black, Hispanic, and American Indian or Alaskan Native.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-1. Science and engineering bachelor's degree recipients in 1997 and 1998, by sex, race/ethnicity, and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Sex		Race/ethnicity				
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/Alaskan Native
All science and engineering fields.....	743,400	366,800	376,600	561,300	51,600	54,100	71,600	4,800
Total science.....	628,800	274,800	354,000	478,100	45,800	46,200	54,300	4,300
Computer and information sciences.....	46,000	34,200	11,800	30,400	4,900	3,700	6,900	S
Life and related sciences, total.....	164,000	73,000	91,100	123,300	9,000	9,700	21,200	S
Agricultural and food sciences.....	15,700	8,200	7,500	14,400	S	S	S	S
Biological sciences.....	134,900	57,300	77,600	96,700	8,500	8,300	20,700	S
Environmental life sciences including forestry science.....	13,500	7,500	6,000	12,200	S	S	S	S
Mathematical and related sciences.....	23,700	12,600	11,100	18,800	1,600	900	2,300	S
Physical and related sciences, total.....	36,500	22,500	14,100	29,800	2,100	1,600	2,900	S
Chemistry, except biochemistry.....	20,100	10,600	9,500	15,100	1,700	1,000	2,200	S
Earth sciences, geology, and oceanography.....	8,700	5,800	3,000	8,100	S	S	S	S
Physics and astronomy.....	7,200	5,800	1,300	6,200	300	300	S	S
Other physical sciences.....	600	S	S	S	S	S	S	S
Psychology.....	146,700	34,200	112,500	115,600	11,200	11,800	6,000	S
Social and related sciences, total.....	211,800	98,300	113,400	160,200	17,100	18,500	15,000	S
Economics.....	32,700	21,400	11,300	23,200	1,400	2,300	5,800	S
Political science and related sciences.....	71,700	39,200	32,400	54,600	5,700	6,500	4,500	S
Sociology and anthropology.....	69,500	23,500	46,000	53,300	7,300	6,100	S	S
Other social sciences.....	37,900	14,200	23,800	29,100	2,700	3,500	S	S
Total engineering.....	114,600	92,000	22,600	83,100	5,800	7,900	17,300	400
Aerospace and related engineering.....	2,400	2,100	300	1,800	100	200	300	S
Chemical engineering.....	12,400	7,300	5,100	8,900	800	600	2,000	S
Civil and architectural engineering.....	20,200	15,100	5,100	16,000	700	1,300	2,000	S
Electrical, electronic, computer and communications engineering.....	34,200	30,500	3,700	21,600	2,100	2,800	7,600	S
Industrial engineering.....	6,000	4,000	2,000	3,900	600	600	800	S
Mechanical engineering.....	26,300	23,000	3,300	20,400	1,100	1,800	3,100	S
Other engineering.....	13,200	10,100	3,100	10,700	S	600	1,500	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-2. Science and engineering master's degree recipients in 1997 and 1998, by sex, race/ethnicity, and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Sex		Race/ethnicity		
		Male	Female	White, non-Hispanic	Asian or Pacific Islander	Under-represented minority <sup>1</sup>
All science and engineering fields.....	157,000	91,700	65,300	104,400	35,800	16,900
Total science.....	110,400	53,600	56,800	77,200	20,000	13,200
Computer and information sciences.....	20,000	14,300	5,600	8,300	10,400	1,300
Life and related sciences, total.....	16,600	9,100	7,500	12,200	3,000	1,300
Agricultural and food sciences.....	2,300	1,500	S	1,800	S	S
Biological sciences.....	11,600	6,000	5,600	8,300	2,300	1,000
Environmental life sciences including forestry science.....	2,600	1,600	S	2,100	S	S
Mathematical and related sciences.....	7,200	4,200	3,100	4,900	1,600	700
Physical and related sciences, total.....	9,100	5,800	3,200	6,500	1,800	700
Chemistry, except biochemistry.....	3,700	2,000	1,700	2,300	1,000	300
Earth sciences, geology, and oceanography.....	3,000	2,000	900	2,500	S	S
Physics and astronomy.....	2,300	1,800	S	1,600	S	S
Other physical sciences.....	S	S	S	S	S	S
Psychology.....	30,000	7,700	22,300	24,300	S	4,800
Social and related sciences, total.....	27,500	12,400	15,100	20,900	2,200	4,400
Economics.....	4,300	2,900	1,400	2,700	S	S
Political science and related sciences.....	9,400	4,500	4,900	7,300	S	1,600
Sociology and anthropology.....	4,300	1,100	3,100	3,600	S	S
Other social sciences.....	9,500	3,900	5,700	7,200	S	1,700
Total engineering.....	46,700	38,100	8,500	27,200	15,800	3,700
Aerospace and related engineering.....	1,500	1,300	S	1,100	S	S
Chemical engineering.....	2,300	1,600	600	1,300	700	S
Civil and architectural engineering.....	6,600	5,000	1,600	4,600	1,400	600
Electrical, electronic, computer and communications engineering.....	16,300	14,000	2,400	7,300	7,600	1,400
Industrial engineering.....	3,600	3,000	600	2,300	S	400
Mechanical engineering.....	6,800	6,100	700	4,300	2,200	S
Other engineering.....	9,600	7,200	2,500	6,300	2,700	600

<sup>1</sup> The underrepresented minority category includes Black, Hispanic, and American Indian or Alaskan Native.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-3. Race/ethnicity of science and engineering bachelor's degree recipients in 1997 and 1998, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Race/ethnicity					
		White, non-Hispanic		Asian or Pacific Islander		Underrepresented minority <sup>1</sup>	
		Male	Female	Male	Female	Male	Female
All science and engineering fields.....	743,400	282,600	278,700	38,500	33,100	45,600	64,900
Total science.....	628,800	215,000	263,200	24,900	29,400	34,900	61,400
Computer and information sciences.....	46,000	23,700	6,600	5,500	S	5,000	3,700
Life and related sciences, total.....	164,000	57,400	65,900	8,900	12,300	6,700	12,900
Agricultural and food sciences.....	15,700	7,700	6,700	S	S	S	S
Biological sciences.....	134,900	42,800	53,900	8,700	12,100	5,900	11,600
Environmental life sciences including forestry science.....	13,500	6,900	5,300	S	S	S	S
Mathematical and related sciences.....	23,700	10,700	8,200	S	S	1,100	1,500
Physical and related sciences, total.....	36,500	19,200	10,600	1,200	1,700	2,100	1,800
Chemistry, except biochemistry.....	20,100	8,400	6,600	S	S	1,400	1,300
Earth sciences, geology, and oceanography.....	8,700	5,500	2,600	S	S	S	S
Physics and astronomy.....	7,200	5,100	1,100	S	S	500	S
Other physical sciences.....	600	S	S	S	S	S	S
Psychology.....	146,700	26,800	88,800	S	S	5,500	19,500
Social and related sciences, total.....	211,800	77,200	83,000	6,600	8,400	14,600	22,000
Economics.....	32,700	15,900	7,300	3,100	S	2,400	S
Political science and related sciences.....	71,700	31,500	23,100	S	S	5,700	6,900
Sociology and anthropology.....	69,500	18,800	34,600	S	S	4,500	9,500
Other social sciences.....	37,900	11,000	18,100	S	S	2,000	4,300
Total engineering.....	114,600	67,700	15,500	13,600	3,700	10,700	3,500
Aerospace and related engineering.....	2,400	1,500	200	300	S	300	S
Chemical engineering.....	12,400	5,400	3,500	1,100	S	700	800
Civil and architectural engineering.....	20,200	12,200	3,800	S	S	1,700	S
Electrical, electronic, computer and communications engineering.....	34,200	19,600	S	6,800	S	4,100	900
Industrial engineering.....	6,000	2,600	1,300	600	S	800	500
Mechanical engineering.....	26,300	17,800	2,600	2,800	S	2,400	S
Other engineering.....	13,200	8,400	2,300	900	S	800	S

<sup>1</sup> The underrepresented minority category includes Black, Hispanic, and American Indian or Alaskan Native.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-4. Race/ethnicity of science and engineering master's degree recipients in 1997 and 1998, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Race/ethnicity					
		White, non-Hispanic		Asian or Pacific Islander		Underrepresented minority <sup>1</sup>	
		Male	Female	Male	Female	Male	Female
All science and engineering fields.....	157,000	59,300	45,100	24,100	11,700	8,300	8,600
Total science.....	110,400	36,700	40,400	11,400	8,600	5,500	7,700
Computer and information sciences.....	20,000	6,500	1,800	6,900	3,500	1,000	S
Life and related sciences, total.....	16,600	6,900	5,300	1,500	1,500	700	700
Agricultural and food sciences.....	2,300	S	S	S	S	S	S
Biological sciences.....	11,600	4,500	3,800	S	S	S	S
Environmental life sciences including forestry science.....	2,600	1,300	S	S	S	S	S
Mathematical and related sciences.....	7,200	2,700	2,200	S	S	S	S
Physical and related sciences, total.....	9,100	4,200	2,300	1,200	S	500	S
Chemistry, except biochemistry.....	3,700	1,200	1,100	S	S	S	S
Earth sciences, geology, and oceanography.....	3,000	1,700	800	S	S	S	S
Physics and astronomy.....	2,300	1,200	S	S	S	S	S
Other physical sciences.....	S	S	S	S	S	S	S
Psychology.....	30,000	6,500	17,800	S	S	1,000	3,800
Social and related sciences, total.....	27,500	9,900	11,000	S	1,500	1,900	2,600
Economics.....	4,300	2,000	S	S	S	S	S
Political science and related sciences.....	9,400	3,600	3,800	S	S	800	S
Sociology and anthropology.....	4,300	S	2,600	S	S	S	S
Other social sciences.....	9,500	3,300	4,000	S	S	S	1,200
Total engineering.....	46,700	22,600	4,600	12,700	3,100	2,800	800
Aerospace and related engineering.....	1,500	1,000	S	S	S	S	S
Chemical engineering.....	2,300	1,000	S	600	S	S	S
Civil and architectural engineering.....	6,600	3,600	S	S	S	S	S
Electrical, electronic, computer and communications engineering.....	16,300	6,400	S	6,300	1,300	1,300	S
Industrial engineering.....	3,600	2,000	S	S	S	S	S
Mechanical engineering.....	6,800	3,900	S	2,000	S	S	S
Other engineering.....	9,600	4,700	1,600	2,000	S	S	S

<sup>1</sup> The underrepresented minority category includes Black, Hispanic, and American Indian or Alaskan Native.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-5. Age of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Age			
		Less than 25	25-29	30-34	35 or more
All science and engineering fields.....	743,400	437,500	208,200	39,500	58,200
Total science.....	628,800	377,300	168,700	31,100	51,800
Computer and information sciences.....	46,000	20,600	13,300	4,000	8,200
Life and related sciences, total.....	164,000	107,700	42,800	6,800	6,800
Agricultural and food sciences.....	15,700	9,300	4,600	S	S
Biological sciences.....	134,900	91,000	33,800	5,700	4,400
Environmental life sciences including forestry sciences.....	13,500	7,400	4,400	S	S
Mathematical and related sciences.....	23,700	15,100	5,500	1,900	S
Physical and related sciences, total.....	36,500	22,700	9,500	2,000	2,300
Chemistry, except biochemistry.....	20,100	12,600	5,000	1,300	S
Earth sciences, geology, and oceanography.....	8,700	5,000	2,700	S	S
Physics and astronomy.....	7,200	4,700	1,700	S	S
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	81,300	41,200	6,400	17,700
Social and related sciences, total.....	211,800	129,900	56,400	10,000	15,500
Economics.....	32,700	23,600	7,600	S	S
Political science and related sciences.....	71,700	50,200	15,400	3,500	2,600
Sociology and anthropology.....	69,500	37,400	21,300	3,900	6,900
Other social sciences.....	37,900	18,800	12,100	S	5,200
Total engineering.....	114,600	60,200	39,500	8,400	6,400
Aerospace and related engineering.....	2,400	1,500	800	S	S
Chemical engineering.....	12,400	8,400	3,300	S	S
Civil and architectural engineering.....	20,200	9,200	8,200	1,400	1,300
Electrical, electronic, computer and communications engineering.....	34,200	16,000	12,000	3,100	3,200
Industrial engineering.....	6,000	3,000	2,400	S	S
Mechanical engineering.....	26,300	14,000	8,800	2,300	S
Other engineering.....	13,200	8,100	4,100	S	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates on recent college graduates are obtained from a sample survey of individuals whose most recent bachelor's or master's degrees in science or engineering field and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-6. Age of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Age			
		Less than 25	25-29	30-34	35 or more
All science and engineering fields.....	157,000	7,500	73,800	36,300	39,400
Total science.....	110,400	4,300	50,100	24,900	31,000
Computer and information sciences.....	20,000	S	7,900	5,300	6,100
Life and related sciences, total.....	16,600	1,000	8,400	3,700	3,400
Agricultural and food sciences.....	2,300	S	1,100	S	S
Biological sciences.....	11,600	S	6,400	2,300	2,000
Environmental life sciences including forestry science.....	2,600	S	S	S	S
Mathematical and related sciences.....	7,200	S	3,300	1,900	1,600
Physical and related sciences, total.....	9,100	S	5,100	2,000	1,600
Chemistry, except biochemistry.....	3,700	S	2,100	900	S
Earth sciences, geology, and oceanography.....	3,000	S	1,600	500	700
Physics and astronomy.....	2,300	S	1,300	600	S
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	S	11,900	5,200	12,400
Social and related sciences, total.....	27,500	1,200	13,600	6,800	6,000
Economics.....	4,300	S	2,600	S	S
Political science and related sciences.....	9,400	S	4,600	2,500	1,600
Sociology and anthropology.....	4,300	S	2,400	S	S
Other social sciences.....	9,500	S	3,900	2,500	3,000
Total engineering.....	46,700	3,200	23,700	11,400	8,400
Aerospace and related engineering.....	1,500	S	900	S	S
Chemical engineering.....	2,300	S	1,400	S	S
Civil and architectural engineering.....	6,600	S	3,700	1,700	S
Electrical, electronic, computer and communications engineering.....	16,300	1,100	7,900	4,200	3,100
Industrial engineering.....	3,600	S	1,300	1,100	1,000
Mechanical engineering.....	6,800	S	3,900	1,600	S
Other engineering.....	9,600	S	4,700	2,100	2,200

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-7. Citizenship of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	U.S. citizen			Non-U.S. citizen
		Total	From birth	Naturalized	
All science and engineering fields.....	743,400	708,800	660,000	48,800	34,700
Total science.....	628,800	603,800	564,600	39,200	25,000
Computer and information sciences.....	46,000	42,200	37,700	4,400	3,800
Life and related sciences, total.....	164,000	157,600	145,200	12,400	6,400
Agricultural and food sciences.....	15,700	15,300	15,100	S	S
Biological sciences.....	134,900	128,900	116,900	12,000	6,000
Environmental life sciences including forestry science.....	13,500	13,400	13,300	S	S
Mathematical and related sciences.....	23,700	22,300	20,900	S	S
Physical and related sciences, total.....	36,500	34,400	32,800	1,600	2,100
Chemistry, except biochemistry.....	20,100	18,400	17,200	1,200	1,600
Earth sciences, geology, and oceanography.....	8,700	8,600	8,500	S	S
Physics and astronomy.....	7,200	6,800	6,600	S	S
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	142,300	134,100	8,100	4,400
Social and related sciences, total.....	211,800	205,000	193,800	11,200	6,700
Economics.....	32,700	29,700	26,800	3,000	2,900
Political science and related sciences.....	71,700	69,800	66,400	3,400	1,900
Sociology and anthropology.....	69,500	68,300	65,000	3,300	S
Other social sciences.....	37,900	37,100	35,600	S	S
Total engineering.....	114,600	105,000	95,400	9,600	9,600
Aerospace and related engineering.....	2,400	2,100	2,000	S	200
Chemical engineering.....	12,400	11,400	10,800	S	1,000
Civil and architectural engineering.....	20,200	19,000	18,000	S	S
Electrical, electronic, computer and communications engineering.....	34,200	29,600	24,600	5,000	4,600
Industrial engineering.....	6,000	5,500	5,100	400	500
Mechanical engineering.....	26,300	24,800	23,000	1,800	S
Other engineering.....	13,200	12,600	11,900	S	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

Degree recipients who did not live in the United States during April 1999 were excluded from the survey.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table A-8. Citizenship of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	U.S. citizen			Non-U.S. citizen
		Total	From birth	Naturalized	
All science and engineering fields.....	157,000	120,400	108,700	11,700	36,600
Total science.....	110,400	89,400	82,200	7,200	20,900
Computer and information sciences.....	20,000	9,600	7,700	1,800	10,400
Life and related sciences, total.....	16,600	14,700	13,400	1,400	1,800
Agricultural and food sciences.....	2,300	1,900	1,800	S	S
Biological sciences.....	11,600	10,400	9,200	S	S
Environmental life sciences including forestry science.....	2,600	2,500	2,300	S	S
Mathematical and related sciences.....	7,200	5,100	4,400	S	2,200
Physical and related sciences, total.....	9,100	7,000	6,500	S	2,100
Chemistry, except biochemistry.....	3,700	2,300	2,200	S	1,300
Earth sciences, geology, and oceanography.....	3,000	2,700	2,600	S	S
Physics and astronomy.....	2,300	1,800	1,600	S	S
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	29,100	27,400	1,700	S
Social and related sciences, total.....	27,500	24,000	22,700	1,200	3,600
Economics.....	4,300	2,600	2,500	S	1,700
Political science and related sciences.....	9,400	8,600	8,300	S	S
Sociology and anthropology.....	4,300	4,100	3,800	S	S
Other social sciences.....	9,500	8,700	8,200	S	S
Total engineering.....	46,700	31,000	26,500	4,500	15,700
Aerospace and related engineering.....	1,500	1,100	1,000	S	400
Chemical engineering.....	2,300	1,600	1,400	S	600
Civil and architectural engineering.....	6,600	5,200	4,600	S	1,400
Electrical, electronic, computer and communications engineering.....	16,300	8,700	6,600	2,100	7,600
Industrial engineering.....	3,600	2,500	2,300	S	1,000
Mechanical engineering.....	6,800	5,000	4,300	S	1,900
Other engineering.....	9,600	7,000	6,200	S	2,700

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

Degree recipients who did not live in the United States during April 1999 were excluded from the survey.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-1. Undergraduate grade point average of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Undergraduate GPA		
		3.25 or higher	2.75 to 3.24	Below 2.75
All science and engineering fields.....	743,400	383,900	280,700	77,800
Total science.....	628,800	331,200	233,000	63,600
Computer and information sciences.....	46,000	22,400	18,800	4,800
Life and related sciences, total.....	164,000	89,800	59,700	14,500
Agricultural and food sciences.....	15,700	6,000	7,000	2,700
Biological sciences.....	134,900	77,500	47,100	10,200
Environmental life sciences including forestry science.....	13,500	6,300	5,600	S
Mathematical and related sciences.....	23,700	14,900	6,500	2,300
Physical and related sciences, total.....	36,500	20,000	13,000	3,500
Chemistry, except biochemistry.....	20,100	11,500	6,600	2,000
Earth sciences, geology, and oceanography.....	8,700	3,900	3,800	900
Physics and astronomy.....	7,200	4,400	2,300	500
Other physical sciences.....	600	S	S	S
Psychology.....	146,700	81,700	52,500	12,300
Social and related sciences, total.....	211,800	102,500	82,400	26,300
Economics.....	32,700	14,700	13,200	4,600
Political science and related sciences.....	71,700	37,800	25,100	8,700
Sociology and anthropology.....	69,500	29,800	31,000	8,500
Other social sciences.....	37,900	20,100	13,100	4,500
Total engineering.....	114,600	52,700	47,700	14,200
Aerospace and related engineering.....	2,400	1,100	900	400
Chemical engineering.....	12,400	7,200	4,400	800
Civil and architectural engineering.....	20,200	8,300	9,200	2,800
Electrical, electronic, computer and communications engineering.....	34,200	17,100	13,300	3,800
Industrial engineering.....	6,000	1,900	3,000	1,200
Mechanical engineering.....	26,300	11,600	11,600	3,200
Other engineering.....	13,200	5,700	5,400	2,100

**KEY:** GPA=Grade point average.

S=Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding and because a small number of graduates reported that their undergraduate courses were ungraded are excluded.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-2. Undergraduate grade point average of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Undergraduate GPA		
		3.25 or higher	2.75 to 3.24	Below 2.75
All science and engineering fields.....	157,000	102,900	43,700	9,900
Total science.....	110,400	73,000	30,200	6,900
Computer and information sciences.....	20,000	14,100	4,700	S
Life and related sciences, total.....	16,600	9,800	5,600	1,100
Agricultural and food sciences.....	2,300	S	S	S
Biological sciences.....	11,600	7,800	3,500	S
Environmental life sciences including forestry science.....	2,600	S	1,400	S
Mathematical and related sciences.....	7,200	5,800	1,300	S
Physical and related sciences, total.....	9,100	6,000	2,600	S
Chemistry, except biochemistry.....	3,700	2,300	1,200	S
Earth sciences, geology, and oceanography.....	3,000	1,900	900	S
Physics and astronomy.....	2,300	1,800	S	S
Other physical sciences.....	S	S	S	S
Psychology.....	30,000	19,700	7,800	2,500
Social and related sciences, total.....	27,500	17,600	8,200	1,600
Economics.....	4,300	3,400	S	S
Political science and related sciences.....	9,400	6,300	3,000	S
Sociology and anthropology.....	4,300	2,700	1,300	S
Other social sciences.....	9,500	5,200	3,100	S
Total engineering.....	46,700	29,900	13,400	3,000
Aerospace and related engineering.....	1,500	1,000	400	S
Chemical engineering.....	2,300	1,500	700	S
Civil and architectural engineering.....	6,600	3,700	2,400	S
Electrical, electronic, computer and communications engineering.....	16,300	11,400	3,900	S
Industrial engineering.....	3,600	1,800	1,400	S
Mechanical engineering.....	6,800	4,900	1,600	S
Other engineering.....	9,600	5,700	2,900	1,100

**KEY:** S=GPA=Grade point average.

Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding and because a small number of graduates reported that their undergraduate courses were ungraded are excluded.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-3. Science and engineering bachelor's degree recipients in 1997 and 1998 who attended community colleges and earned associate's degrees, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Community college		Associate's degree	
		Number attended community college	Percent attended community college	Number with associate's degree	Percent with associate's degree
All science and engineering fields.....	743,400	316,300	43	104,100	14
Total science.....	628,800	269,000	43	91,900	15
Computer and information sciences.....	46,000	20,100	44	8,200	18
Life and related sciences, total.....	164,000	70,000	43	18,700	11
Agricultural and food sciences.....	15,700	8,200	52	2,600	17
Biological sciences.....	134,900	56,700	42	14,100	10
Environmental life sciences including forestry science.....	13,500	5,100	38	S	S
Mathematical and related sciences.....	23,700	8,800	37	2,400	10
Physical and related sciences, total.....	36,500	13,100	36	3,800	10
Chemistry, except biochemistry.....	20,100	7,500	37	2,300	11
Earth sciences, geology, and oceanography.....	8,700	3,200	37	900	10
Physics and astronomy.....	7,200	2,300	32	500	7
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	72,700	50	30,200	21
Social and related sciences, total.....	211,800	84,300	40	28,600	14
Economics.....	32,700	10,600	32	2,600	8
Political science and related sciences.....	71,700	23,300	32	5,900	8
Sociology and anthropology.....	69,500	34,500	50	13,200	19
Other social sciences.....	37,900	15,900	42	6,900	18
Total engineering.....	114,600	47,400	41	12,200	11
Aerospace and related engineering.....	2,400	800	33	S	S
Chemical engineering.....	12,400	3,900	31	S	S
Civil and architectural engineering.....	20,200	8,300	41	1,800	9
Electrical, electronic, computer and communications engineering.....	34,200	16,500	48	5,400	16
Industrial engineering.....	6,000	2,300	38	600	10
Mechanical engineering.....	26,300	10,800	41	2,700	10
Other engineering.....	13,200	4,800	36	900	7

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-4. Science and engineering master's degree recipients in 1997 and 1998 who attended community colleges and earned associate's degrees, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Community college		Associate's degree	
		Number attended community college	Percent attended community college	Number with associate's degree	Percent with associate's degree
All science and engineering fields.....	157,000	54,600	35	16,400	10
Total science.....	110,400	41,800	38	12,400	11
Computer and information sciences.....	20,000	5,300	27	1,700	9
Life and related sciences, total.....	16,600	7,300	44	S	S
Agricultural and food sciences.....	2,300	S	S	S	S
Biological sciences.....	11,600	5,300	46	S	S
Environmental life sciences including forestry science.....	2,600	1,200	46	S	S
Mathematical and related sciences.....	7,200	2,300	32	S	S
Physical and related sciences, total.....	9,100	2,900	32	800	9
Chemistry, except biochemistry.....	3,700	1,100	30	S	S
Earth sciences, geology, and oceanography.....	3,000	1,100	37	S	S
Physics and astronomy.....	2,300	S	S	S	S
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	13,700	46	5,500	18
Social and related sciences, total.....	27,500	10,300	37	2,800	10
Economics.....	4,300	1,600	37	S	S
Political science and related sciences.....	9,400	2,500	27	S	S
Sociology and anthropology.....	4,300	1,900	44	S	S
Other social sciences.....	9,500	4,300	45	S	S
Total engineering.....	46,700	12,800	27	4,000	9
Aerospace and related engineering.....	1,500	300	20	S	S
Chemical engineering.....	2,300	S	S	S	S
Civil and architectural engineering.....	6,600	2,000	30	S	S
Electrical, electronic, computer and communications engineering.....	16,300	4,600	28	1,400	9
Industrial engineering.....	3,600	1,200	33	S	S
Mechanical engineering.....	6,800	1,600	24	S	S
Other engineering.....	9,600	2,600	27	S	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-5. Sources of financial support for science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Sources of support							
		Earnings from employment	Gifts from parents/relatives	Scholarships, grants, fellowships	Loans from college, bank, government	Assistantships, work study	Employer assistance	Loans from parents or relatives	Other sources
All science and engineering fields.....	743,400	462,800	516,000	445,900	421,200	205,200	61,400	58,300	13,900
Total science.....	628,800	384,100	437,200	371,700	357,700	173,800	49,200	47,400	11,800
Computer and information sciences.....	46,000	29,300	26,100	26,600	25,500	15,100	7,400	S	S
Life and related sciences, total.....	164,000	98,900	123,100	106,100	85,800	45,400	8,900	11,800	3,600
Agricultural and food sciences.....	15,700	11,400	10,500	10,700	8,600	3,300	S	S	S
Biological sciences.....	134,900	78,900	102,400	87,900	70,000	37,800	6,500	10,300	S
Environmental life sciences including forestry science.....	13,500	8,600	10,200	7,500	7,100	4,300	S	S	S
Mathematical and related sciences.....	23,700	15,000	15,700	15,500	13,700	6,600	2,200	1,700	S
Physical and related sciences, total.....	36,500	23,600	26,600	24,600	21,500	12,100	3,000	2,400	S
Chemistry, except biochemistry.....	20,100	12,200	14,700	13,800	12,000	6,500	1,300	S	S
Earth sciences, geology, and oceanography.....	8,700	6,200	6,700	5,000	5,100	2,800	800	600	S
Physics and astronomy.....	7,200	4,800	4,900	5,400	4,100	2,600	800	600	S
Other physical sciences.....	600	S	S	S	S	S	S	S	S
Psychology.....	146,700	86,900	96,700	80,400	87,100	34,800	12,200	9,900	S
Social and related sciences, total.....	211,800	130,400	149,000	118,500	124,100	59,800	15,500	18,800	3,300
Economics.....	32,700	18,000	25,200	18,600	17,000	9,100	S	3,100	S
Political science and related sciences.....	71,700	44,300	54,200	43,700	39,800	20,900	5,100	6,400	S
Sociology and anthropology.....	69,500	44,300	44,300	35,200	44,200	20,500	5,200	5,700	S
Other social sciences.....	37,900	23,900	25,400	21,100	23,100	9,300	3,500	3,500	S
Total engineering.....	114,600	78,700	78,800	74,100	63,600	31,400	12,300	10,900	2,100
Aerospace and related engineering.....	2,400	1,500	1,700	1,700	1,200	500	300	200	S
Chemical engineering.....	12,400	8,600	8,600	10,000	6,700	4,000	S	800	S
Civil and architectural engineering.....	20,200	14,500	13,900	12,100	10,500	4,500	1,600	1,500	S
Electrical, electronic, computer and communications engineering.....	34,200	22,700	22,300	22,700	19,800	10,600	5,100	3,500	S
Industrial engineering.....	6,000	4,200	4,500	3,300	3,500	1,400	S	600	S
Mechanical engineering.....	26,300	18,500	18,100	15,200	14,800	6,600	3,100	3,300	S
Other engineering.....	13,200	8,700	9,700	9,200	7,100	3,800	1,200	1,100	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** For the columns, details may not add to totals because of rounding.

Respondents may have multiple sources of support. Therefore, details in the rows may sum to more than "Total recipients."

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-6. Sources of financial support for science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Sources of support							
		Earnings from employment	Gifts from parents/relatives	Scholarships, grants, fellowships	Loans from college, bank, government	Assistantships, work study	Employer assistance	Loans from parents or relatives	Other sources
All science and engineering fields.....	157,000	83,900	52,900	86,000	54,800	74,200	41,800	7,400	3,800
Total science.....	110,400	62,200	38,800	60,000	45,700	52,000	24,100	5,100	3,100
Computer and information sciences.....	20,000	9,900	6,600	9,000	3,000	9,600	7,000	S	S
Life and related sciences, total.....	16,600	9,000	6,600	9,000	6,700	7,900	3,300	S	S
Agricultural and food sciences.....	2,300	1,400	1,200	1,700	S	1,600	S	S	S
Biological sciences.....	11,600	5,800	4,700	6,300	4,900	5,400	2,300	S	S
Environmental life sciences including forestry science.....	2,600	1,800	S	S	1,200	S	S	S	S
Mathematical and related sciences.....	7,200	3,100	1,900	4,900	1,900	4,700	1,700	S	S
Physical and related sciences, total.....	9,100	4,000	2,200	6,800	2,500	6,000	2,400	S	S
Chemistry, except biochemistry.....	3,700	1,300	900	2,800	800	2,300	1,100	S	S
Earth sciences, geology, and oceanography.....	3,000	1,600	900	2,200	1,000	2,000	600	S	S
Physics and astronomy.....	2,300	1,100	S	1,800	600	1,600	600	S	S
Other physical sciences.....	S	S	S	S	S	S	S	S	S
Psychology.....	30,000	19,000	11,700	12,700	17,200	10,700	5,500	S	S
Social and related sciences, total.....	27,500	17,200	9,700	17,500	14,300	13,200	4,100	1,800	S
Economics.....	4,300	2,200	1,600	2,900	1,500	2,200	S	S	S
Political science and related sciences.....	9,400	5,800	3,400	6,200	4,800	4,000	1,400	S	S
Sociology and anthropology.....	4,300	3,200	1,700	2,900	3,000	2,800	S	S	S
Other social sciences.....	9,500	6,000	3,100	5,500	5,000	4,100	S	S	S
Total engineering.....	46,700	21,700	14,100	26,000	9,100	22,200	17,700	2,300	800
Aerospace and related engineering.....	1,500	600	400	700	300	600	700	S	S
Chemical engineering.....	2,300	1,000	600	1,500	600	1,300	600	S	S
Civil and architectural engineering.....	6,600	3,900	2,200	4,100	2,100	3,300	2,000	S	S
Electrical, electronic, computer and communications engineering.....	16,300	6,900	4,900	8,700	3,400	7,800	6,000	1,200	S
Industrial engineering.....	3,600	1,800	1,100	1,200	S	1,300	1,500	S	S
Mechanical engineering.....	6,800	3,000	2,200	4,500	1,000	3,800	2,600	S	S
Other engineering.....	9,600	4,500	2,700	5,400	1,200	4,100	4,400	S	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** For the columns, details may not add to totals because of rounding.

Respondents may have multiple sources of support. Therefore, details in the rows may sum to more than "Total recipients."

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-7. Amount borrowed for undergraduate education among science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Undergraduate loan amount <sup>1</sup>			
		Did not borrow	\$1-\$9,999	\$10,000-\$24,999	\$25,000 or more
All science and engineering fields.....	743,400	296,000	92,000	224,400	131,100
Total science.....	628,800	250,200	79,300	190,400	108,900
Computer and information sciences.....	46,000	18,600	7,700	12,200	7,600
Life and related sciences, total.....	164,000	72,100	16,700	48,500	26,800
Agricultural and food sciences.....	15,700	6,600	2,100	5,000	2,000
Biological sciences.....	134,900	59,400	13,300	39,300	22,900
Environmental life sciences including forestry science.....	13,500	6,100	S	4,200	S
Mathematical and related sciences.....	23,700	9,200	3,400	6,700	4,300
Physical and related sciences, total.....	36,500	14,000	5,200	11,000	6,300
Chemistry, except biochemistry.....	20,100	7,600	2,900	6,100	3,400
Earth sciences, geology, and oceanography.....	8,700	3,300	1,400	2,600	1,400
Physics and astronomy.....	7,200	2,800	900	2,000	1,400
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	55,200	18,600	46,300	26,500
Social and related sciences, total.....	211,800	81,000	27,700	65,700	37,400
Economics.....	32,700	14,300	3,800	9,000	5,600
Political science and related sciences.....	71,700	29,200	8,900	21,200	12,300
Sociology and anthropology.....	69,500	23,700	9,100	23,800	12,900
Other social sciences.....	37,900	13,800	5,900	11,700	6,600
Total engineering.....	114,600	45,800	12,700	34,000	22,200
Aerospace and related engineering.....	2,400	1,100	300	600	400
Chemical engineering.....	12,400	5,200	1,200	3,800	2,100
Civil and architectural engineering.....	20,200	9,100	2,200	5,600	3,300
Electrical, electronic, computer and communications engineering.....	34,200	12,500	3,900	10,900	6,900
Industrial engineering.....	6,000	2,200	500	2,200	1,000
Mechanical engineering.....	26,300	10,100	3,100	7,400	5,700
Other engineering.....	13,200	5,500	1,600	3,400	2,700

<sup>1</sup> Undergraduate loan amount represents the entire amount borrowed during their undergraduate education.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-8. Amount borrowed for undergraduate and graduate education among science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Undergraduate and graduate loan amount <sup>1</sup>			
		Did not borrow	\$1-\$9,999	\$10,000-\$24,999	\$25,000 or more
All science and engineering fields.....	157,000	69,200	20,100	30,800	36,900
Total science.....	110,400	43,400	14,200	22,500	30,300
Computer and information sciences.....	20,000	12,400	2,800	2,800	2,000
Life and related sciences, total.....	16,600	6,900	2,600	2,700	4,400
Agricultural and food sciences.....	2,300	S	S	S	S
Biological sciences.....	11,600	4,700	1,800	1,700	3,400
Environmental life sciences including forestry science.....	2,600	S	S	S	S
Mathematical and related sciences.....	7,200	3,500	1,000	1,900	800
Physical and related sciences, total.....	9,100	4,200	1,300	1,900	1,700
Chemistry, except biochemistry.....	3,700	2,000	S	S	S
Earth sciences, geology, and oceanography.....	3,000	1,100	S	900	S
Physics and astronomy.....	2,300	1,100	S	S	S
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	8,700	2,900	6,400	12,100
Social and related sciences, total.....	27,500	7,700	3,600	6,900	9,400
Economics.....	4,300	2,100	S	S	S
Political science and related sciences.....	9,400	2,200	1,400	2,000	3,800
Sociology and anthropology.....	4,300	S	S	1,800	1,600
Other social sciences.....	9,500	2,800	1,400	2,400	2,900
Total engineering.....	46,700	25,800	6,000	8,300	6,600
Aerospace and related engineering.....	1,500	900	S	S	300
Chemical engineering.....	2,300	1,200	S	500	S
Civil and architectural engineering.....	6,600	2,800	1,200	1,300	1,300
Electrical, electronic, computer and communications engineering.....	16,300	8,900	2,200	2,700	2,400
Industrial engineering.....	3,600	2,100	S	800	S
Mechanical engineering.....	6,800	4,100	S	1,400	S
Other engineering.....	9,600	5,800	1,200	1,500	1,200

<sup>1</sup> Undergraduate and graduate loan amount represents the entire amount borrowed for undergraduate and graduate degrees completed as of the reference date of the survey.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-9. Amount owed for undergraduate loans among science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Amount owed <sup>1</sup>			
		Did not owe	\$1-\$9,999	\$10,000-\$24,999	\$25,000 or more
All science and engineering fields.....	743,400	352,000	119,200	207,600	64,700
Total science.....	628,800	297,200	100,900	175,400	55,300
Computer and information sciences.....	46,000	23,600	9,500	10,300	2,600
Life and related sciences, total.....	164,000	83,200	22,100	45,500	13,200
Agricultural and food sciences.....	15,700	7,700	3,100	3,800	S
Biological sciences.....	134,900	68,800	17,500	37,200	11,400
Environmental life sciences including forestry science.....	13,500	6,700	S	4,600	S
Mathematical and related sciences.....	23,700	11,000	3,800	6,300	2,700
Physical and related sciences, total.....	36,500	16,600	6,600	10,200	3,100
Chemistry, except biochemistry.....	20,100	9,000	3,800	5,600	1,600
Earth sciences, geology, and oceanography.....	8,700	4,100	1,600	2,400	700
Physics and astronomy.....	7,200	3,100	1,100	2,100	800
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	65,600	24,100	43,100	14,000
Social and related sciences, total.....	211,800	97,200	34,900	59,900	19,700
Economics.....	32,700	17,700	4,500	7,100	3,500
Political science and related sciences.....	71,700	33,300	10,600	20,900	6,900
Sociology and anthropology.....	69,500	28,500	13,300	21,500	6,200
Other social sciences.....	37,900	17,800	6,500	10,500	3,100
Total engineering.....	114,600	54,800	18,300	32,200	9,300
Aerospace and related engineering.....	2,400	1,200	400	600	200
Chemical engineering.....	12,400	5,900	2,100	3,200	1,100
Civil and architectural engineering.....	20,200	10,300	2,800	5,300	1,800
Electrical, electronic, computer and communications engineering.....	34,200	15,300	5,800	10,800	2,200
Industrial engineering.....	6,000	2,600	900	2,000	500
Mechanical engineering.....	26,300	12,800	4,400	6,800	2,300
Other engineering.....	13,200	6,600	1,800	3,400	1,300

<sup>1</sup> The amount owed represents the amount of outstanding undergraduate debt the respondent reported on the reference date of the survey.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-10. Amount owed for undergraduate and graduate loans among science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Amount owed <sup>1</sup>			
		Did not owe	\$1-\$9,999	\$10,000-\$24,999	\$25,000 or more
All science and engineering fields.....	157,000	94,500	17,300	21,200	24,100
Total science.....	110,400	59,700	12,800	16,900	21,000
Computer and information sciences.....	20,000	16,200	1,500	1,600	S
Life and related sciences, total.....	16,600	9,500	2,300	1,800	3,000
Agricultural and food sciences.....	2,300	1,600	S	S	S
Biological sciences.....	11,600	6,500	1,500	1,400	2,300
Environmental life sciences including forestry science.....	2,600	1,400	S	S	S
Mathematical and related sciences.....	7,200	4,700	S	1,000	S
Physical and related sciences, total.....	9,100	5,400	1,300	1,300	1,100
Chemistry, except biochemistry.....	3,700	2,400	S	S	S
Earth sciences, geology, and oceanography.....	3,000	1,600	600	S	S
Physics and astronomy.....	2,300	1,400	S	S	S
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	12,300	3,000	6,000	8,700
Social and related sciences, total.....	27,500	11,700	3,700	5,200	7,000
Economics.....	4,300	2,700	S	S	S
Political science and related sciences.....	9,400	3,800	S	1,700	3,000
Sociology and anthropology.....	4,300	1,000	S	1,300	1,100
Other social sciences.....	9,500	4,200	1,600	1,700	2,100
Total engineering.....	46,700	34,800	4,500	4,300	3,000
Aerospace and related engineering.....	1,500	1,000	S	S	S
Chemical engineering.....	2,300	1,600	S	S	S
Civil and architectural engineering.....	6,600	4,400	1,000	S	S
Electrical, electronic, computer and communications engineering.....	16,300	12,200	1,500	1,800	S
Industrial engineering.....	3,600	2,800	S	S	S
Mechanical engineering.....	6,800	5,100	S	S	S
Other engineering.....	9,600	7,700	S	800	S

<sup>1</sup> The amount owed represents the amount of outstanding debt for undergraduate and graduate degrees as of the reference date of the survey.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-11. Science and engineering bachelor's degree recipients in 1997 and 1998 who have taken college courses since most recent degree and enrollment status, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Have taken additional college courses since most recent degree <sup>1</sup>	Enrollment status <sup>2</sup>		
			Full-time student	Part-time student	Not student
All science and engineering fields.....	743,400	332,100	165,500	59,500	518,500
Total science.....	628,800	292,500	150,800	50,600	427,400
Computer and information sciences.....	46,000	10,100	S	S	41,300
Life and related sciences, total.....	164,000	90,600	54,300	10,600	99,200
Agricultural and food sciences.....	15,700	5,200	3,200	S	12,000
Biological sciences.....	134,900	80,000	48,800	9,500	76,600
Environmental life sciences including forestry sciences.....	13,500	5,500	2,300	S	10,600
Mathematical and related sciences.....	23,700	11,200	4,800	1,800	17,100
Physical and related sciences, total.....	36,500	20,000	12,600	2,500	21,500
Chemistry, except biochemistry.....	20,100	12,000	7,900	S	10,900
Earth sciences, geology, and oceanography.....	8,700	3,400	1,900	S	6,300
Physics and astronomy.....	7,200	4,400	2,600	600	3,900
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	76,700	34,400	18,000	94,200
Social and related sciences, total.....	211,800	83,800	42,400	15,200	154,200
Economics.....	32,700	8,900	4,900	S	26,500
Political science and related sciences.....	71,700	33,400	20,500	4,800	46,400
Sociology and anthropology.....	69,500	26,500	11,700	5,500	52,300
Other social sciences.....	37,900	15,000	5,300	3,600	29,000
Total engineering.....	114,600	39,600	14,600	8,900	91,100
Aerospace and related engineering.....	2,400	900	500	300	1,600
Chemical engineering.....	12,400	4,400	1,900	S	9,800
Civil and architectural engineering.....	20,200	6,000	2,500	S	16,800
Electrical, electronic, computer and communications engineering.....	34,200	13,000	4,000	3,600	26,700
Industrial engineering.....	6,000	1,600	400	S	5,300
Mechanical engineering.....	26,300	8,800	2,600	2,400	21,300
Other engineering.....	13,200	4,900	2,700	1,000	9,500

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

<sup>2</sup> Enrollment status on April 15, 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-12. Science and engineering master's degree recipients in 1997 and 1998 who have taken college courses since most recent degree and enrollment status, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Have taken additional college courses since most recent degree <sup>1</sup>	Enrollment status <sup>2</sup>		
			Full-time student	Part-time student	Not student
All science and engineering fields.....	157,000	61,000	32,100	8,800	116,100
Total science.....	110,400	44,000	24,300	5,800	80,300
Computer and information sciences.....	20,000	4,800	1,600	S	17,800
Life and related sciences, total.....	16,600	7,500	4,900	S	10,600
Agricultural and food sciences.....	2,300	S	S	S	1,700
Biological sciences.....	11,600	6,000	4,300	S	6,700
Environmental life sciences including forestry sciences.....	2,600	S	S	S	2,200
Mathematical and related sciences.....	7,200	3,400	1,800	S	5,000
Physical and related sciences, total.....	9,100	4,400	2,900	S	5,800
Chemistry, except biochemistry.....	3,700	1,900	1,200	S	2,300
Earth sciences, geology, and oceanography.....	3,000	1,100	600	S	2,300
Physics and astronomy.....	2,300	1,400	1,100	S	1,100
Other physical sciences.....	S	S	S	S	S
Psychology.....	30,000	12,000	6,900	1,700	21,400
Social and related sciences, total.....	27,500	12,000	6,200	1,700	19,600
Economics.....	4,300	2,400	1,300	S	2,900
Political science and related sciences.....	9,400	3,300	1,900	S	6,900
Sociology and anthropology.....	4,300	2,500	1,400	S	2,300
Other social sciences.....	9,500	3,800	1,500	S	7,500
Total engineering.....	46,700	17,000	7,900	3,000	35,800
Aerospace and related engineering.....	1,500	600	400	S	1,000
Chemical engineering.....	2,300	900	500	S	1,600
Civil and architectural engineering.....	6,600	1,600	S	S	5,600
Electrical, electronic, computer and communications engineering.....	16,300	6,300	2,400	1,200	12,700
Industrial engineering.....	3,600	900	S	S	2,900
Mechanical engineering.....	6,800	3,000	1,100	800	4,900
Other engineering.....	9,600	3,700	2,000	S	7,000

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

<sup>2</sup> Enrollment status on April 15, 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-13. Science and engineering bachelor's degree recipients in 1997 and 1998 who have not taken college courses since most recent degree and likelihood of taking additional courses, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total number not taking college courses since most recent degree <sup>1</sup>	Likelihood will take college courses		
		Very likely	Somewhat likely	Very unlikely
All science and engineering fields.....	411,400	279,400	99,000	33,000
Total science.....	336,300	232,000	77,500	26,900
Computer and information sciences.....	35,900	21,400	10,600	3,900
Life and related sciences, total.....	73,400	50,700	16,800	6,000
Agricultural and food sciences.....	10,500	4,500	3,800	2,200
Biological sciences.....	54,900	40,600	10,900	3,400
Environmental life sciences including forestry sciences.....	8,000	5,600	S	S
Mathematical and related sciences.....	12,500	8,300	3,400	S
Physical and related sciences, total.....	16,500	10,900	4,500	1,100
Chemistry, except biochemistry.....	8,100	5,500	2,200	S
Earth sciences, geology, and oceanography.....	5,300	3,200	1,600	S
Physics and astronomy.....	2,800	1,900	800	S
Other physical sciences.....	S	S	S	S
Psychology.....	70,000	50,200	14,900	4,900
Social and related sciences, total.....	127,900	90,500	27,300	10,100
Economics.....	23,800	16,200	6,200	S
Political science and related sciences.....	38,300	30,000	6,500	S
Sociology and anthropology.....	43,000	27,600	9,800	5,500
Other social sciences.....	22,900	16,700	4,800	S
Total engineering.....	75,000	47,500	21,400	6,100
Aerospace and related engineering.....	1,400	1,100	300	S
Chemical engineering.....	8,000	5,700	1,800	S
Civil and architectural engineering.....	14,200	7,300	5,100	1,800
Electrical, electronic, computer and communications engineering.....	21,200	13,700	5,900	S
Industrial engineering.....	4,400	2,900	1,300	S
Mechanical engineering.....	17,500	11,800	4,800	S
Other engineering.....	8,200	4,900	2,300	1,000

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-14. Science and engineering master's degree recipients in 1997 and 1998 who have not taken college courses since most recent degree and likelihood of taking additional courses, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total number not taking college courses since most recent degree <sup>1</sup>	Likelihood will take college courses		
		Very likely	Somewhat likely	Very unlikely
All science and engineering fields.....	96,000	49,800	32,000	14,300
Total science.....	66,300	35,300	21,300	9,800
Computer and information sciences.....	15,200	6,500	5,800	2,800
Life and related sciences, total.....	9,100	4,500	2,700	1,900
Agricultural and food sciences.....	1,500	S	S	S
Biological sciences.....	5,600	3,100	1,500	S
Environmental life sciences including forestry sciences.....	1,900	S	S	S
Mathematical and related sciences.....	3,900	1,900	1,200	S
Physical and related sciences, total.....	4,700	2,500	1,300	800
Chemistry, except biochemistry.....	1,800	1,000	S	S
Earth sciences, geology, and oceanography.....	1,900	1,000	600	S
Physics and astronomy.....	900	S	S	S
Other physical sciences.....	S	S	S	S
Psychology.....	18,000	11,100	5,200	1,800
Social and related sciences, total.....	15,500	8,700	5,200	1,600
Economics.....	2,000	S	S	S
Political science and related sciences.....	6,100	3,000	2,300	S
Sociology and anthropology.....	1,700	1,100	S	S
Other social sciences.....	5,700	3,600	1,600	S
Total engineering.....	29,700	14,500	10,700	4,500
Aerospace and related engineering.....	900	600	S	S
Chemical engineering.....	1,300	500	500	S
Civil and architectural engineering.....	5,000	1,600	2,300	S
Electrical, electronic, computer and communications engineering.....	10,000	5,400	3,100	1,500
Industrial engineering.....	2,700	1,500	800	S
Mechanical engineering.....	3,900	1,800	1,700	S
Other engineering.....	5,900	3,200	2,000	S

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-15. Science and engineering bachelor's degree recipients in 1997 and 1998 who have taken college courses since most recent degree, by type of degree or certificate sought and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Took college courses between completing most recent degree and week of April 15, 1999 <sup>1</sup>				
		Total number	Type of degree or certificate sought			
			Ph.D. or prof. degree	Master's degree	Other degree or certificate	No degree or certificate
All science and engineering fields.....	743,400	300,300	78,000	142,800	39,900	39,600
Total science.....	628,800	266,500	73,900	118,900	38,700	35,000
Computer and information sciences.....	46,000	8,700	S	5,200	S	S
Life and related sciences, total.....	164,000	84,500	32,000	26,900	11,600	14,000
Agricultural and food sciences.....	15,700	4,700	S	2,200	S	S
Biological sciences.....	134,900	74,600	29,800	22,400	10,500	11,900
Environmental life sciences including forestry science.....	13,500	5,100	S	2,300	S	S
Mathematical and related sciences.....	23,700	9,600	1,400	5,300	S	S
Physical and related sciences, total.....	36,500	18,400	7,600	7,100	2,300	1,500
Chemistry, except biochemistry.....	20,100	11,000	5,900	3,000	1,400	S
Earth sciences, geology, and oceanography.....	8,700	3,100	S	2,000	S	S
Physics and astronomy.....	7,200	4,100	1,300	2,000	S	S
Other physical sciences.....	600	S	S	S	S	S
Psychology.....	146,700	68,500	7,800	40,900	11,800	8,000
Social and related sciences, total.....	211,800	76,700	24,500	33,400	11,200	7,700
Economics.....	32,700	8,600	2,600	4,200	S	S
Political science and related sciences.....	71,700	30,400	15,500	9,300	3,700	S
Sociology and anthropology.....	69,500	24,400	4,600	13,600	3,800	S
Other social sciences.....	37,900	13,300	S	6,400	3,000	S
Total engineering.....	114,600	33,800	4,100	23,900	1,200	4,600
Aerospace and related engineering.....	2,400	900	S	700	S	S
Chemical engineering.....	12,400	3,600	1,400	1,500	S	S
Civil and architectural engineering.....	20,200	5,300	S	3,900	S	S
Electrical, electronic, computer and communications engineering.....	34,200	11,200	S	9,000	S	S
Industrial engineering.....	6,000	1,200	S	900	S	S
Mechanical engineering.....	26,300	7,100	S	5,200	S	S
Other engineering.....	13,200	4,500	1,000	2,700	S	S

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-16. Science and engineering master's degree recipients in 1997 and 1998 who have taken college courses since most recent degree, by type of degree or certificate sought and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Took college courses between completing most recent degree and week of April 15, 1999 <sup>1</sup>				
		Total number	Type of degree or certificate sought			
			Ph.D. or prof. degree	Master's degree	Other degree or certificate	No degree or certificate
All science and engineering fields.....	157,000	56,800	36,300	5,800	5,400	9,400
Total science.....	110,400	41,300	27,200	3,400	4,900	5,700
Computer and information sciences.....	20,000	4,200	2,400	S	S	S
Life and related sciences, total.....	16,600	7,200	4,900	S	S	S
Agricultural and food sciences.....	2,300	S	S	S	S	S
Biological sciences.....	11,600	5,700	4,100	S	S	S
Environmental life sciences including forestry science.....	2,600	S	S	S	S	S
Mathematical and related sciences.....	7,200	3,100	2,300	S	S	S
Physical and related sciences, total.....	9,100	4,300	3,200	S	S	S
Chemistry, except biochemistry.....	3,700	1,900	1,300	S	S	S
Earth sciences, geology, and oceanography.....	3,000	1,100	700	S	S	S
Physics and astronomy.....	2,300	1,300	1,200	S	S	S
Other physical sciences.....	S	S	S	S	S	S
Psychology.....	30,000	11,600	7,600	S	2,200	S
Social and related sciences, total.....	27,500	11,000	6,800	S	S	1,900
Economics.....	4,300	2,100	1,400	S	S	S
Political science and related sciences.....	9,400	3,000	2,000	S	S	S
Sociology and anthropology.....	4,300	2,500	1,800	S	S	S
Other social sciences.....	9,500	3,300	1,600	S	S	S
Total engineering.....	46,700	15,500	9,000	2,400	S	3,700
Aerospace and related engineering.....	1,500	600	400	S	S	S
Chemical engineering.....	2,300	900	600	S	S	S
Civil and architectural engineering.....	6,600	1,400	S	S	S	S
Electrical, electronic, computer and communications engineering.....	16,300	5,700	3,100	S	S	1,700
Industrial engineering.....	3,600	900	S	S	S	S
Mechanical engineering.....	6,800	2,700	1,500	S	S	S
Other engineering.....	9,600	3,400	2,100	S	S	S

<sup>1</sup> Most recent degree as of the survey reference period, April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-17. Future plans for highest degree expected among science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Future plans for highest degree expected			
		Bachelor's degree	Master's degree	Doctorate	Professional
All science and engineering fields.....	743,400	55,700	401,900	191,200	91,500
Total science.....	628,800	46,000	319,900	171,400	88,800
Computer and information sciences.....	46,000	6,000	29,700	9,700	S
Life and related sciences, total.....	164,000	11,400	66,600	45,700	39,000
Agricultural and food sciences.....	15,700	3,700	7,700	2,800	S
Biological sciences.....	134,900	6,300	51,000	40,000	36,400
Environmental life sciences including forestry science.....	13,500	S	7,900	2,800	S
Mathematical and related sciences.....	23,700	2,100	14,400	6,400	S
Physical and related sciences, total.....	36,500	2,200	16,300	14,200	3,800
Chemistry, except biochemistry.....	20,100	S	8,000	7,600	3,400
Earth sciences, geology, and oceanography.....	8,700	900	5,100	2,500	S
Physics and astronomy.....	7,200	S	2,900	3,900	S
Other physical sciences.....	600	S	S	S	S
Psychology.....	146,700	7,400	77,500	50,900	10,600
Social and related sciences, total.....	211,800	16,900	115,300	44,500	34,400
Economics.....	32,700	S	22,900	4,400	3,000
Political science and related sciences.....	71,700	3,300	30,800	15,100	22,000
Sociology and anthropology.....	69,500	8,400	38,300	16,500	6,300
Other social sciences.....	37,900	2,900	23,300	8,600	3,100
Total engineering.....	114,600	9,800	82,100	19,800	2,700
Aerospace and related engineering.....	2,400	S	1,600	700	S
Chemical engineering.....	12,400	1,000	7,700	2,900	800
Civil and architectural engineering.....	20,200	2,800	14,700	2,300	S
Electrical, electronic, computer and communications engineering.....	34,200	2,300	24,600	6,900	S
Industrial engineering.....	6,000	S	4,800	900	S
Mechanical engineering.....	26,300	2,200	20,100	3,400	S
Other engineering.....	13,200	1,100	8,700	2,700	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding and because a small number of graduates who reported their highest expected degree as "other" are excluded.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table B-18. Future plans for highest degree expected among science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Future plans by highest degree expected		
		Master's degree	Doctorate	Professional
All science and engineering fields.....	157,000	61,600	88,000	6,700
Total science.....	110,400	38,700	64,900	6,100
Computer and information sciences.....	20,000	10,100	9,800	S
Life and related sciences, total.....	16,600	6,300	7,200	3,100
Agricultural and food sciences.....	2,300	1,300	S	S
Biological sciences.....	11,600	3,800	5,000	2,800
Environmental life sciences including forestry science.....	2,600	1,200	1,200	S
Mathematical and related sciences.....	7,200	2,600	4,500	S
Physical and related sciences, total.....	9,100	2,700	5,800	S
Chemistry, except biochemistry.....	3,700	900	2,400	S
Earth sciences, geology, and oceanography.....	3,000	1,200	1,700	S
Physics and astronomy.....	2,300	S	1,700	S
Other physical sciences.....	S	S	S	S
Psychology.....	30,000	8,400	20,700	S
Social and related sciences, total.....	27,500	8,600	16,900	2,000
Economics.....	4,300	1,500	2,700	S
Political science and related sciences.....	9,400	3,600	4,600	1,200
Sociology and anthropology.....	4,300	S	3,500	S
Other social sciences.....	9,500	2,900	6,100	S
Total engineering.....	46,700	22,800	23,100	S
Aerospace and related engineering.....	1,500	500	1,000	S
Chemical engineering.....	2,300	1,300	1,000	S
Civil and architectural engineering.....	6,600	4,100	2,400	S
Electrical, electronic, computer and communications engineering.....	16,300	7,500	8,500	S
Industrial engineering.....	3,600	1,700	1,800	S
Mechanical engineering.....	6,800	3,200	3,500	S
Other engineering.....	9,600	4,600	4,800	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding and because a small number of graduates who reported their highest expected degree as "other" are excluded.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-1. Selected employment characteristics of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Employed					
		Total employed	Counting all jobs <sup>1</sup>		Principal job only <sup>2</sup>		Have a second job
			Full time	Part time	Full time	Part time	
All science and engineering fields.....	743,400	625,600	536,700	88,900	527,400	98,200	69,800
Total science.....	628,800	519,000	437,900	81,100	429,000	90,000	65,300
Computer and information sciences.....	46,000	43,300	41,900	S	41,600	S	2,900
Life and related sciences, total.....	164,000	121,300	101,700	19,600	99,400	21,900	16,700
Agricultural and food sciences.....	15,700	13,300	12,100	S	11,900	S	2,600
Biological sciences.....	134,900	96,200	79,600	16,600	77,700	18,500	13,100
Environmental life sciences including forestry science.....	13,500	11,800	9,900	S	9,800	1,900	S
Mathematical and related sciences.....	23,700	21,300	17,900	3,300	17,300	4,000	2,300
Physical and related sciences, total.....	36,500	30,900	25,200	5,700	24,800	6,100	3,600
Chemistry, except biochemistry.....	20,100	15,800	13,600	2,300	13,400	2,400	1,800
Earth sciences, geology, and oceanography.....	8,700	8,200	6,700	1,400	6,600	1,600	800
Physics and astronomy.....	7,200	6,400	4,600	1,800	4,500	1,900	800
Other physical sciences.....	600	S	S	S	S	S	S
Psychology.....	146,700	123,800	96,000	27,800	92,800	31,000	18,700
Social and related sciences, total.....	211,800	178,400	155,300	23,100	153,200	25,200	21,000
Economics.....	32,700	28,700	25,700	2,900	25,400	3,300	S
Political science and related sciences.....	71,700	55,300	46,900	8,500	46,500	8,800	5,100
Sociology and anthropology.....	69,500	61,300	53,600	7,700	53,100	8,200	9,000
Other social sciences.....	37,900	33,100	29,100	4,000	28,200	5,000	4,900
Total engineering.....	114,600	106,600	98,700	7,900	98,400	8,200	4,500
Aerospace and related engineering.....	2,400	2,100	1,900	300	1,800	300	S
Chemical engineering.....	12,400	11,100	10,600	S	10,600	S	S
Civil and architectural engineering.....	20,200	18,900	17,400	1,500	17,200	1,700	S
Electrical, electronic, computer and communications engineering.....	34,200	32,400	30,100	2,200	30,100	2,200	S
Industrial engineering.....	6,000	5,400	5,200	S	5,200	S	S
Mechanical engineering.....	26,300	24,700	23,000	1,700	22,900	1,800	S
Other engineering.....	13,200	12,000	10,600	1,400	10,600	1,500	S

<sup>1</sup> The "counting all jobs" category is based on whether the graduate's typical work week was 35 or more hours counting all jobs held during the reference week. Employed graduates who worked 35 or more hours per week counting all jobs are classified as full time and all other employed graduates are classified as part time.

<sup>2</sup> The "principal job only" category is based on the number of hours usually worked during a typical week on the principal job. Employed graduates who worked 35 or more hours per week on the principal job are classified as full time and all other employed graduates are classified as part time.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-2. Selected employment characteristics of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Employed					
		Total employed	Counting all jobs <sup>1</sup>		Principal job only <sup>2</sup>		Have a second job
			Full time	Part time	Full time	Part time	
All science and engineering fields.....	157,000	139,200	123,300	15,800	120,600	18,600	15,700
Total science.....	110,400	96,800	83,700	13,100	81,100	15,700	13,700
Computer and information sciences.....	20,000	19,200	18,400	S	18,400	S	S
Life and related sciences, total.....	16,600	13,000	11,900	S	11,500	1,500	1,900
Agricultural and food sciences.....	2,300	2,100	1,900	S	1,700	S	S
Biological sciences.....	11,600	8,400	7,700	S	7,500	S	1,300
Environmental life sciences including forestry science.....	2,600	2,500	2,400	S	2,300	S	S
Mathematical and related sciences.....	7,200	6,200	4,900	1,300	4,800	1,400	S
Physical and related sciences, total.....	9,100	7,700	6,900	900	6,700	1,100	1,000
Chemistry, except biochemistry.....	3,700	3,000	2,700	S	2,600	S	S
Earth sciences, geology, and oceanography.....	3,000	2,700	2,500	S	2,500	S	S
Physics and astronomy.....	2,300	1,900	1,600	S	1,500	S	S
Other physical sciences.....	S	S	S	S	S	S	S
Psychology.....	30,000	25,900	21,100	4,800	20,500	5,400	5,200
Social and related sciences, total.....	27,500	24,800	20,400	4,300	19,300	5,500	4,200
Economics.....	4,300	3,800	3,000	S	2,900	S	S
Political science and related sciences.....	9,400	8,800	7,600	S	7,400	S	1,300
Sociology and anthropology.....	4,300	3,900	2,800	1,200	2,200	1,700	S
Other social sciences.....	9,500	8,300	7,100	S	6,800	1,500	1,600
Total engineering.....	46,700	42,400	39,700	2,700	39,500	2,800	2,000
Aerospace and related engineering.....	1,500	1,300	1,300	S	1,300	S	S
Chemical engineering.....	2,300	1,900	1,800	S	1,800	S	S
Civil and architectural engineering.....	6,600	6,100	5,700	S	5,700	S	S
Electrical, electronic, computer and communications engineering.....	16,300	15,000	14,200	S	14,200	S	S
Industrial engineering.....	3,600	3,400	3,200	S	3,200	S	S
Mechanical engineering.....	6,800	6,200	5,800	S	5,800	S	S
Other engineering.....	9,600	8,300	7,700	S	7,600	S	S

<sup>1</sup> The "counting all jobs" category is based on whether the graduate's typical work week was 35 or more hours counting all jobs held during the reference week. Employed graduates who worked 35 or more hours per week counting all jobs are classified as full time and all other employed graduates are classified as part time.

<sup>2</sup> The "principal job only" category is based on the number of hours usually worked during a typical week on the principal job. Employed graduates who worked 35 or more hours per week on the principal job are classified as full time and all other employed graduates are classified as part time.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-3. Employment status of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Not in labor force	In labor force		
			Total	Employed	Unemployed <sup>1</sup>
All science and engineering fields.....	743,400	91,300	652,100	625,600	26,500
Total science.....	628,800	86,000	542,800	519,000	23,800
Computer and information sciences.....	46,000	S	44,300	43,300	S
Life and related sciences.....	164,000	36,400	127,600	121,300	6,300
Mathematical and related sciences.....	23,700	2,100	21,600	21,300	S
Physical and related sciences.....	36,500	4,800	31,700	30,900	800
Psychology.....	146,700	16,000	130,700	123,800	6,900
Social and related sciences.....	211,800	24,900	186,900	178,400	8,500
Total engineering.....	114,600	5,300	109,300	106,600	2,700

<sup>1</sup> The unemployed are those who were not working on April 15 and who were seeking work or who were on layoff from a job.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-3. Employment status of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Not in labor force	In labor force		
			Total	Employed	Unemployed <sup>1</sup>
All science and engineering fields.....	743,400	91,300	652,100	625,600	26,500
Total science.....	628,800	86,000	542,800	519,000	23,800
Computer and information sciences.....	46,000	S	44,300	43,300	S
Life and related sciences.....	164,000	36,400	127,600	121,300	6,300
Mathematical and related sciences.....	23,700	2,100	21,600	21,300	S
Physical and related sciences.....	36,500	4,800	31,700	30,900	800
Psychology.....	146,700	16,000	130,700	123,800	6,900
Social and related sciences.....	211,800	24,900	186,900	178,400	8,500
Total engineering.....	114,600	5,300	109,300	106,600	2,700

<sup>1</sup> The unemployed are those who were not working on April 15 and who were seeking work or who were on layoff from a job.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-4. Employment status of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Not in labor force	In labor force		
			Total	Employed	Unemployed <sup>1</sup>
All science and engineering fields.....	157,000	14,400	142,700	139,200	3,500
Total science.....	110,400	11,000	99,300	96,800	2,500
Computer and information sciences.....	20,000	S	19,400	19,200	S
Life and related sciences.....	16,600	3,400	13,200	13,000	S
Mathematical and related sciences.....	7,200	S	6,500	6,200	S
Physical and related sciences.....	9,100	1,200	7,900	7,700	S
Psychology.....	30,000	3,300	26,700	25,900	S
Social and related sciences.....	27,500	1,900	25,700	24,800	S
Total engineering.....	46,700	3,300	43,300	42,400	1,000

<sup>1</sup> The unemployed are those who were not working on April 15 and who were seeking work or who were on layoff from a job.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
 These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-5. Labor force status of science and engineering bachelor's degree recipients in 1997 and 1998 not studying full time, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total number	Not in labor force	In labor force		
			Total	Employed	Unemployed <sup>1</sup>
All science and engineering fields.....	578,000	23,000	555,000	539,200	15,800
Total science.....	478,000	21,800	456,200	442,400	13,800
Computer and information sciences.....	43,700	S	42,700	42,100	S
Life and related sciences.....	109,800	6,100	103,700	100,000	3,700
Mathematical and related sciences.....	18,900	S	18,200	17,800	S
Physical and related sciences.....	24,000	S	23,400	22,900	S
Psychology.....	112,300	5,200	107,100	102,500	4,600
Social and related sciences.....	169,400	8,200	161,100	157,100	4,000
Total engineering.....	100,000	1,200	98,800	96,700	2,000

<sup>1</sup> The unemployed are those who were not working on April 15 and who were seeking work or who were on layoff from a job.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table C-6. Labor force status of science and engineering master's degree recipients in 1997 and 1998 not studying full time, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total number	Not in labor force	In labor force		
			Total	Employed	Unemployed <sup>1</sup>
All science and engineering fields.....	124,900	4,000	120,900	118,200	2,700
Total science.....	86,100	3,500	82,600	80,600	2,000
Computer and information sciences.....	18,400	S	18,100	17,900	S
Life and related sciences.....	11,600	S	11,200	11,100	S
Mathematical and related sciences.....	5,500	S	5,200	4,900	S
Physical and related sciences.....	6,200	S	5,800	5,700	S
Psychology.....	23,100	S	21,700	20,900	S
Social and related sciences.....	21,300	S	20,600	20,000	S
Total engineering.....	38,800	S	38,300	37,500	S

<sup>1</sup> The unemployed are those who were not working on April 15 and who were seeking work or who were on layoff from a job.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-1. Relation of occupation to field of degree among science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total employed	S&E occupation		Non-S&E occupation
		Occupation in same broad S&E field as degree <sup>1</sup>	Occupation in different broad S&E field than degree <sup>1</sup>	
All science and engineering fields.....	625,600	150,700	47,500	427,400
Total science.....	519,000	77,900	33,300	407,800
Computer and information sciences.....	43,300	25,500	S	15,200
Life and related sciences, total.....	121,300	21,900	7,700	91,700
Agricultural and food sciences.....	13,300	2,200	S	11,000
Biological sciences.....	96,200	18,200	5,400	72,600
Environmental life sciences including forestry science.....	11,800	S	2,200	8,100
Mathematical and related sciences.....	21,300	2,100	3,700	15,400
Physical and related sciences, total.....	30,900	12,900	4,600	13,400
Chemistry, except biochemistry.....	15,800	7,900	1,800	6,200
Earth sciences, geology, and oceanography.....	8,200	3,300	700	4,200
Physics and astronomy.....	6,400	1,700	2,100	2,600
Other physical sciences.....	S	S	S	S
Psychology.....	123,800	7,600	5,300	110,900
Social and related sciences, total.....	178,400	7,800	9,400	161,200
Economics.....	28,700	S	S	24,100
Political science and related sciences.....	55,300	2,800	2,900	49,700
Sociology and anthropology.....	61,300	S	S	57,000
Other social sciences.....	33,100	S	S	30,400
Total engineering.....	106,600	72,800	14,200	19,600
Aerospace and related engineering.....	2,100	1,400	200	500
Chemical engineering.....	11,100	8,200	1,200	1,700
Civil and architectural engineering.....	18,900	15,000	S	3,300
Electrical, electronic, computer and communications engineering.....	32,400	18,700	9,100	4,500
Industrial engineering.....	5,400	3,000	800	1,600
Mechanical engineering.....	24,700	19,200	S	5,000
Other engineering.....	12,000	7,400	1,600	3,000

<sup>1</sup> Comparisons between occupation and degree field were done at the broad field level only. For example, there are 7,900 people with chemistry bachelor's degrees working in physical science occupations; these occupations may be in chemistry or in another physical science field. Comparisons are between field of 1997 or 1998 S&E bachelor's degree and principal job in April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-2. Relation of occupation to field of degree among science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total employed	S&E occupation		Non-S&E occupation
		Occupation in same broad S&E field as degree <sup>1</sup>	Occupation in different broad S&E field than degree <sup>1</sup>	
All science and engineering fields.....	139,200	71,100	18,300	49,800
Total science.....	96,800	44,000	8,400	44,400
Computer and information sciences.....	19,200	14,500	S	4,000
Life and related sciences, total.....	13,000	5,300	1,300	6,400
Agricultural and food sciences.....	2,100	S	S	1,100
Biological sciences.....	8,400	3,900	S	3,900
Environmental life sciences including forestry science.....	2,500	S	S	1,400
Mathematical and related sciences.....	6,200	3,000	1,200	2,000
Physical and related sciences, total.....	7,700	4,700	1,300	1,700
Chemistry, except biochemistry.....	3,000	1,900	S	S
Earth sciences, geology, and oceanography.....	2,700	1,800	S	600
Physics and astronomy.....	1,900	1,100	S	S
Other physical sciences.....	S	S	S	S
Psychology.....	25,900	9,900	S	14,400
Social and related sciences, total.....	24,800	6,600	2,300	15,900
Economics.....	3,800	1,600	S	1,700
Political science and related sciences.....	8,800	2,300	S	5,900
Sociology and anthropology.....	3,900	2,000	S	1,800
Other social sciences.....	8,300	S	S	6,500
Total engineering.....	42,400	27,100	9,900	5,400
Aerospace and related engineering.....	1,300	1,000	S	S
Chemical engineering.....	1,900	1,400	S	S
Civil and architectural engineering.....	6,100	4,600	S	S
Electrical, electronic, computer and communications engineering.....	15,000	8,300	5,700	1,000
Industrial engineering.....	3,400	2,100	S	S
Mechanical engineering.....	6,200	4,800	S	S
Other engineering.....	8,300	4,900	1,700	1,700

<sup>1</sup> Comparisons between occupation and degree field were done at the broad field level only. For example, there are 1,900 people with chemistry master's degrees working in physical science occupations; these occupations may be in chemistry or in another physical science field. Comparisons are between field of 1997 or 1998 S&E master's degree and principal job in April 1999.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-3. Science and engineering bachelor's degree recipients in 1997 and 1998 having a career path job and seeking a career path job, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total recipients	Career path job			No career path job	Seeking a career path job		
		Total	Male	Female		Total	Male	Female
All science and engineering fields.....	743,400	374,800	203,100	171,700	368,700	122,900	55,200	67,700
Total science.....	628,800	289,000	133,900	155,100	339,800	111,100	46,100	65,000
Computer and information sciences.....	46,000	37,400	28,800	8,600	8,600	4,300	2,800	S
Life and related sciences, total.....	164,000	64,600	28,300	36,300	99,400	31,300	14,400	16,900
Agricultural and food sciences.....	15,700	8,900	5,100	3,800	6,800	2,500	S	S
Biological sciences.....	134,900	48,700	19,600	29,100	86,100	24,500	10,500	14,000
Environmental life sciences including forestry science.....	13,500	7,000	3,500	3,500	6,500	4,400	2,600	S
Mathematical and related sciences.....	23,700	12,700	6,600	6,100	11,100	3,300	1,500	1,800
Physical and related sciences, total.....	36,500	16,800	11,200	5,700	19,700	6,100	3,300	2,700
Chemistry, except biochemistry.....	20,100	8,800	5,000	3,800	11,300	3,100	1,400	1,800
Earth sciences, geology, and oceanography.....	8,700	4,000	2,800	1,200	4,700	2,100	1,300	800
Physics and astronomy.....	7,200	3,700	3,200	S	3,400	700	600	S
Other physical sciences.....	600	S	S	S	S	S	S	S
Psychology.....	146,700	63,300	13,800	49,500	83,400	25,700	5,400	20,300
Social and related sciences, total.....	211,800	94,200	45,300	48,900	117,500	40,400	18,700	21,700
Economics.....	32,700	18,600	12,100	6,500	14,100	4,800	3,200	S
Political science and related sciences.....	71,700	30,800	16,400	14,300	40,900	11,500	6,600	4,900
Sociology and anthropology.....	69,500	26,700	10,300	16,400	42,800	16,900	5,900	11,000
Other social sciences.....	37,900	18,200	6,600	11,700	19,700	7,300	3,100	4,200
Total engineering.....	114,600	85,800	69,100	16,600	28,800	11,700	9,100	2,700
Aerospace and related engineering.....	2,400	1,600	1,300	200	800	300	300	S
Chemical engineering.....	12,400	8,000	5,000	3,100	4,300	2,000	1,000	1,000
Civil and architectural engineering.....	20,200	15,500	11,600	4,000	4,600	2,500	1,900	S
Electrical, electronic, computer and communications engineering.....	34,200	27,000	24,000	3,000	7,200	2,200	2,000	S
Industrial engineering.....	6,000	4,600	3,100	1,500	1,300	600	400	S
Mechanical engineering.....	26,300	19,900	17,200	2,800	6,400	2,500	2,400	S
Other engineering.....	13,200	9,000	6,900	2,100	4,200	1,500	1,000	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

A career path job was defined in the survey as a job that would help the graduate in future career plans or a job in the field that he/she wants to make a career.

These estimates of recent college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-4. Science and engineering master's degree recipients in 1997 and 1998 having a career path job and seeking a career path job, by sex and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total recipients	Career path job			No career path job	Seeking a career path job		
		Total	Male	Female		Total	Male	Female
All science and engineering fields.....	157,000	103,100	60,800	42,200	54,000	16,200	8,100	8,100
Total science.....	110,400	67,900	32,300	35,600	42,500	13,200	5,700	7,500
Computer and information sciences.....	20,000	16,800	11,900	4,900	3,200	S	S	S
Life and related sciences, total.....	16,600	8,400	4,000	4,400	8,200	2,300	S	S
Agricultural and food sciences.....	2,300	1,500	S	S	S	S	S	S
Biological sciences.....	11,600	5,300	2,000	3,300	6,300	1,300	S	S
Environmental life sciences including forestry science.....	2,600	1,600	S	S	S	S	S	S
Mathematical and related sciences.....	7,200	4,300	2,500	1,800	2,900	S	S	S
Physical and related sciences, total.....	9,100	4,500	2,900	1,600	4,500	1,300	700	600
Chemistry, except biochemistry.....	3,700	1,800	1,000	S	1,900	S	S	S
Earth sciences, geology, and oceanography.....	3,000	1,600	1,200	S	1,300	800	S	S
Physics and astronomy.....	2,300	1,000	700	S	1,300	S	S	S
Other physical sciences.....	S	S	S	S	S	S	S	S
Psychology.....	30,000	18,200	4,100	14,100	11,800	3,700	S	2,500
Social and related sciences, total.....	27,500	15,700	6,800	8,800	11,900	4,200	1,500	2,700
Economics.....	4,300	2,300	1,500	S	2,000	S	S	S
Political science and related sciences.....	9,400	5,700	2,800	2,900	3,700	1,400	S	S
Sociology and anthropology.....	4,300	2,100	S	1,500	2,100	S	S	S
Other social sciences.....	9,500	5,500	2,000	3,500	4,000	1,400	S	S
Total engineering.....	46,700	35,200	28,600	6,600	11,500	2,900	2,300	S
Aerospace and related engineering.....	1,500	1,100	1,000	S	400	S	S	S
Chemical engineering.....	2,300	1,500	1,100	500	700	S	S	S
Civil and architectural engineering.....	6,600	4,800	3,600	1,200	1,800	S	S	S
Electrical, electronic, computer and communications engineering.....	16,300	13,200	11,200	2,000	3,100	S	S	S
Industrial engineering.....	3,600	2,700	2,300	S	800	S	S	S
Mechanical engineering.....	6,800	5,000	4,500	S	1,800	S	S	S
Other engineering.....	9,600	6,800	5,000	1,800	2,800	S	S	S

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

A career path job was defined in the survey as a job that would help the graduate in future career plans or a job in the field that he/she wants to make a career.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields and may differ from degree counts presented in other SRS publications.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-5. Relation of job to highest degree among employed science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total employed	Relationship of degree to job <sup>1</sup>		
		Closely related	Somewhat related	Not related
All science and engineering fields.....	625,600	268,100	185,500	172,100
Total science.....	519,000	204,500	150,600	163,900
Computer and information sciences.....	43,300	31,500	8,500	3,300
Life and related sciences, total.....	121,300	53,900	31,400	36,000
Agricultural and food sciences.....	13,300	6,300	4,200	2,700
Biological sciences.....	96,200	42,200	23,500	30,600
Environmental life sciences including forestry sciences.....	11,800	5,400	3,700	2,700
Mathematical and related sciences.....	21,300	10,100	7,000	4,200
Physical and related sciences, total.....	30,900	17,600	7,400	5,900
Chemistry, except biochemistry.....	15,800	10,200	3,300	2,300
Earth sciences, geology, and oceanography.....	8,200	3,700	2,100	2,300
Physics and astronomy.....	6,400	3,400	1,900	1,100
Other physical sciences.....	S	S	S	S
Psychology.....	123,800	44,200	38,500	41,100
Social and related sciences, total.....	178,400	47,300	57,800	73,300
Economics.....	28,700	9,300	12,800	6,500
Political science and related sciences.....	55,300	11,400	17,900	26,000
Sociology and anthropology.....	61,300	17,200	17,800	26,200
Other social sciences.....	33,100	9,300	9,300	14,600
Total engineering.....	106,600	63,600	34,800	8,100
Aerospace and related engineering.....	2,100	1,200	600	300
Chemical engineering.....	11,100	4,800	4,800	1,500
Civil and architectural engineering.....	18,900	12,900	4,800	1,100
Electrical, electronic, computer and communications engineering.....	32,400	21,800	9,300	S
Industrial engineering.....	5,400	2,000	2,800	500
Mechanical engineering.....	24,700	14,100	8,400	2,200
Other engineering.....	12,000	6,700	4,100	1,200

<sup>1</sup> Questionnaire item is "Thinking about the relationship between your work and your education, to what extent was your work on your principal job held during the week of April 15, 1999, related to your highest degree field?"

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-6. Relation of job to highest degree among employed science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total employed	Relationship of degree to job <sup>1</sup>		
		Closely related	Somewhat related	Not related
All science and engineering fields.....	139,200	96,000	30,100	13,100
Total science.....	96,800	67,000	19,400	10,300
Computer and information sciences.....	19,200	15,400	3,300	S
Life and related sciences, total.....	13,000	9,100	2,400	1,500
Agricultural and food sciences.....	2,100	1,300	S	S
Biological sciences.....	8,400	6,400	1,300	S
Environmental life sciences including forestry sciences.....	2,500	1,400	S	S
Mathematical and related sciences.....	6,200	4,300	1,500	S
Physical and related sciences, total.....	7,700	5,000	2,000	700
Chemistry, except biochemistry.....	3,000	2,000	S	S
Earth sciences, geology, and oceanography.....	2,700	1,600	800	S
Physics and astronomy.....	1,900	1,300	S	S
Other physical sciences.....	S	S	S	S
Psychology.....	25,900	18,800	3,700	3,400
Social and related sciences, total.....	24,800	14,500	6,500	3,800
Economics.....	3,800	2,300	S	S
Political science and related sciences.....	8,800	5,100	2,600	S
Sociology and anthropology.....	3,900	2,600	S	S
Other social sciences.....	8,300	4,500	1,900	1,800
Total engineering.....	42,400	28,900	10,700	2,800
Aerospace and related engineering.....	1,300	900	S	S
Chemical engineering.....	1,900	1,100	600	S
Civil and architectural engineering.....	6,100	4,300	1,300	S
Electrical, electronic, computer and communications engineering.....	15,000	11,400	3,000	S
Industrial engineering.....	3,400	2,000	1,100	S
Mechanical engineering.....	6,200	4,100	1,700	S
Other engineering.....	8,300	5,200	2,500	S

<sup>1</sup> Questionnaire item is "Thinking about the relationship between your work and your education, to what extent was your work on your principal job held during the week of April 15, 1999, related to your highest degree field?"

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-7. Occupation of employed science and engineering bachelor's degree recipients in 1997 and 1998, by sex and race/ethnicity: April 1999**

Occupation	Total employed	Sex		Race/ethnicity				
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/Alaskan Native
All occupations.....	625,600	314,800	310,800	477,500	43,900	45,700	55,200	3,400
Total scientists <sup>1</sup> .....	119,500	70,000	49,500	87,300	7,100	9,000	15,500	S
Computer and information scientists.....	52,700	39,200	13,500	36,600	4,100	3,600	8,400	S
Life and related scientists.....	25,300	10,600	14,700	18,500	S	2,200	3,900	S
Mathematical and related scientists.....	3,800	2,600	S	3,100	S	S	S	S
Physical scientists.....	19,200	11,500	7,700	16,300	1,000	800	S	S
Psychologists.....	8,300	S	6,400	5,500	S	S	S	S
Social and related scientists.....	10,200	4,100	6,100	7,200	S	S	S	S
Total engineers <sup>1</sup> .....	78,700	63,100	15,600	60,400	3,200	5,000	9,800	S
Total other occupations.....	427,400	181,700	245,700	329,800	33,600	31,800	29,800	2,500
Managers and related occupations.....	51,100	25,100	26,000	38,500	3,600	3,700	5,100	S
Health and related occupations <sup>2</sup> .....	22,000	8,100	13,900	16,700	1,900	S	S	S
Educators other than S&E postsecondary.....	50,900	18,200	32,600	39,000	3,600	5,600	S	S
Social services and related occupations.....	33,500	8,100	25,300	24,200	4,800	3,400	S	S
Technicians including computer programmers.....	43,600	24,400	19,200	31,100	3,200	2,400	7,000	S
Sales and marketing occupations.....	62,000	30,300	31,700	50,400	3,800	3,800	3,400	S
Other occupations.....	164,300	67,400	97,000	129,900	12,800	11,500	9,100	S

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details see technical notes.

<sup>2</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 recent college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-8. Occupation of employed science and engineering master's degree recipients in 1997 and 1998, by sex and race/ethnicity: April 1999**

Occupation	Total employed	Sex		Race/ethnicity				
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander	American Indian/Alaskan Native
All occupations.....	139,200	81,800	57,300	93,600	7,600	6,900	30,500	S
Total scientists <sup>1</sup> .....	60,500	36,400	24,100	38,100	2,400	2,900	17,000	S
Computer and information scientists.....	26,200	19,500	6,600	11,500	800	900	12,900	S
Life and related scientists.....	6,400	3,500	2,900	4,600	S	S	S	S
Mathematical and related scientists.....	4,200	2,300	1,900	2,900	S	S	S	S
Physical scientists.....	6,300	4,300	1,900	4,900	S	S	900	S
Psychologists.....	10,200	2,800	7,400	8,600	S	S	S	S
Social and related scientists.....	7,300	4,000	3,300	5,600	S	S	S	S
Total engineers <sup>1</sup> .....	28,900	24,400	4,400	19,500	900	1,100	7,300	S
Total other occupations.....	49,800	21,000	28,800	36,000	4,400	2,900	6,200	S
Managers and related occupations.....	11,000	5,300	5,700	7,700	1,200	S	1,400	S
Health and related occupations <sup>2</sup> .....	2,000	S	1,600	S	S	S	S	S
Educators other than S&E postsecondary.....	7,400	2,900	4,500	6,000	900	S	S	S
Social services and related occupations.....	8,500	2,000	6,500	6,400	900	900	S	S
Technicians including computer programmers.....	7,200	4,100	3,000	3,700	S	S	3,000	S
Sales and marketing occupations.....	3,300	1,300	2,000	2,700	S	S	S	S
Other occupations.....	10,500	5,000	5,500	7,900	800	700	S	S

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details see technical notes.

<sup>2</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-9. Occupation of employed science and engineering bachelor's degree recipients in 1997 and 1998, by age: April 1999**

Occupation	Total employed	Age in years			
		Less than 25	25–29	30–34	35 or more
All occupations.....	625,600	360,700	181,500	34,200	49,200
Total scientists <sup>1</sup> .....	119,500	74,300	29,000	6,700	9,400
Computer and information scientists.....	52,700	27,400	15,500	3,900	6,000
Life and related scientists.....	25,300	19,200	4,500	S	S
Mathematical and related scientists.....	3,800	2,600	S	S	S
Physical scientists.....	19,200	10,800	5,300	1,400	1,700
Psychologists.....	8,300	6,100	S	S	S
Social and related scientists.....	10,200	8,300	S	S	S
Total engineers <sup>1</sup> .....	78,700	40,200	27,100	6,400	5,000
Total other occupations.....	427,400	246,200	125,400	21,000	34,800
Managers and related occupations.....	51,100	30,300	12,600	S	6,700
Health and related occupations <sup>2</sup> .....	22,000	13,000	5,700	S	S
Educators other than S&E postsecondary.....	50,900	26,900	14,600	4,300	5,100
Social services and related occupations.....	33,500	15,700	13,100	S	3,800
Technicians including computer programmers.....	43,600	24,300	15,000	1,400	3,000
Sales and marketing occupations.....	62,000	37,400	18,600	3,400	S
Other occupations.....	164,300	98,700	45,800	8,100	11,700

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details see technical notes.

<sup>2</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-10. Occupation of employed science and engineering master's degree recipients in 1997 and 1998, by age: April 1999**

Occupation	Total employed	Age in years			
		Less than 25	25–29	30–34	35 or more
All occupations.....	139,200	6,200	65,600	32,600	34,700
Total scientists <sup>1</sup> .....	60,500	2,700	30,200	13,400	14,200
Computer and information scientists.....	26,200	1,200	12,300	6,300	6,300
Life and related scientists.....	6,400	S	3,700	1,600	S
Mathematical and related scientists.....	4,200	S	2,000	S	1,200
Physical scientists.....	6,300	S	3,400	1,300	1,400
Psychologists.....	10,200	S	4,700	1,700	3,500
Social and related scientists.....	7,300	S	4,100	1,700	S
Total engineers <sup>1</sup> .....	28,900	1,700	14,600	7,000	5,500
Total other occupations.....	49,800	1,700	20,900	12,200	15,000
Managers and related occupations.....	11,000	S	4,600	3,000	2,900
Health and related occupations <sup>2</sup> .....	2,000	S	S	S	S
Educators other than S&E postsecondary.....	7,400	S	2,500	2,300	2,500
Social services and related occupations.....	8,500	S	2,900	1,500	4,000
Technicians including computer programmers.....	7,200	S	3,400	1,900	1,600
Sales and marketing occupations.....	3,300	S	2,100	S	S
Other occupations.....	10,500	S	5,000	2,600	2,200

<sup>1</sup> Science and engineering occupations include postsecondary educators. For more details see technical notes.

<sup>2</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-11. Primary work activity of employed science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total employed	Primary work activity				
		Research and development (R&D)	Computer applications	Management, sales, administration	Teaching	Other
All science and engineering fields.....	625,600	127,000	96,400	212,600	75,000	114,700
Total science.....	519,000	80,200	73,100	187,200	72,500	106,000
Computer and information sciences.....	43,300	5,200	29,500	5,500	S	S
Life and related sciences, total.....	121,300	36,900	7,800	35,300	14,400	26,900
Agricultural and food sciences.....	13,300	2,200	S	6,700	S	2,700
Biological sciences.....	96,200	32,000	5,400	24,600	12,000	22,400
Environmental life sciences including forestry science.....	11,800	2,700	S	4,000	S	1,900
Mathematical and related sciences.....	21,300	2,700	4,800	5,100	6,700	1,900
Physical and related sciences, total.....	30,900	11,400	3,100	6,700	6,100	3,600
Chemistry, except biochemistry.....	15,800	6,700	S	3,900	2,700	1,800
Earth sciences, geology, and oceanography.....	8,200	2,300	1,000	1,900	1,800	1,200
Physics and astronomy.....	6,400	2,200	1,300	800	1,600	400
Other physical sciences.....	S	S	S	S	S	S
Psychology.....	123,800	9,200	9,900	47,300	23,900	33,400
Social and related sciences, total.....	178,400	14,800	18,000	87,300	19,900	38,500
Economics.....	28,700	S	3,500	19,600	S	3,000
Political science and related sciences.....	55,300	6,800	5,400	27,400	4,700	11,000
Sociology and anthropology.....	61,300	4,500	5,200	25,800	8,500	17,200
Other social sciences.....	33,100	S	3,900	14,400	5,600	7,200
Total engineering.....	106,600	46,800	23,200	25,400	2,500	8,700
Aerospace and related engineering.....	2,100	1,100	400	300	S	200
Chemical engineering.....	11,100	4,900	1,400	3,300	S	1,400
Civil and architectural engineering.....	18,900	7,500	3,600	5,500	S	1,900
Electrical, electronic, computer and communications engineering.....	32,400	13,700	11,900	4,800	S	S
Industrial engineering.....	5,400	1,200	1,200	2,500	S	400
Mechanical engineering.....	24,700	13,100	3,000	5,900	S	2,300
Other engineering.....	12,000	5,300	1,800	3,200	S	1,300

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

Primary work activity is defined as activity in which respondent worked most hours on job in typical work week.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-12. Primary work activity of employed science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total employed	Primary work activity				
		Research and development (R&D)	Computer applications	Management, sales, administration	Teaching	Other
All science and engineering fields.....	139,200	44,400	29,200	27,900	13,800	23,900
Total science.....	96,800	24,400	18,500	20,100	12,700	21,000
Computer and information sciences.....	19,200	3,700	12,700	2,200	S	S
Life and related sciences, total.....	13,000	5,500	S	2,500	2,300	1,800
Agricultural and food sciences.....	2,100	S	S	S	S	S
Biological sciences.....	8,400	4,000	S	1,200	1,900	S
Environmental life sciences including forestry science.....	2,500	S	S	S	S	S
Mathematical and related sciences.....	6,200	2,100	1,500	S	1,900	S
Physical and related sciences, total.....	7,700	4,000	800	1,000	1,500	S
Chemistry, except biochemistry.....	3,000	1,700	S	S	S	S
Earth sciences, geology, and oceanography.....	2,700	1,200	S	S	S	S
Physics and astronomy.....	1,900	1,100	S	S	S	S
Other physical sciences.....	S	S	S	S	S	S
Psychology.....	25,900	3,100	S	5,400	2,400	14,000
Social and related sciences, total.....	24,800	6,000	1,600	8,600	4,400	4,100
Economics.....	3,800	S	S	1,400	S	S
Political science and related sciences.....	8,800	2,600	S	3,300	S	1,600
Sociology and anthropology.....	3,900	1,100	S	1,000	S	S
Other social sciences.....	8,300	S	S	3,000	1,800	1,500
Total engineering.....	42,400	19,900	10,700	7,700	1,100	2,900
Aerospace and related engineering.....	1,300	600	300	S	S	S
Chemical engineering.....	1,900	1,000	S	S	S	S
Civil and architectural engineering.....	6,100	2,700	S	1,600	S	S
Electrical, electronic, computer and communications engineering.....	15,000	7,300	5,700	1,600	S	S
Industrial engineering.....	3,400	1,000	800	1,100	S	S
Mechanical engineering.....	6,200	3,800	1,100	800	S	S
Other engineering.....	8,300	3,400	1,500	2,200	S	800

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

Primary work activity is defined as activity in which respondent worked most hours on job in typical work week.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-13. Work-related training taken by employed science and engineering bachelor's degree recipients in 1997 and 1998, by occupation: April 1999**

Occupation	Total employed	Total employed who took any type of work-related training <sup>1</sup>	Type of work-related training			
			Management training	Training in occupational field	General professional training	Other training
All occupations.....	625,600	367,700	86,400	344,700	108,200	33,200
Total scientists <sup>2</sup> .....	119,500	67,200	10,000	63,500	20,000	4,200
Computer and information scientists.....	52,700	34,900	5,400	34,500	10,400	S
Life and related scientists.....	25,300	12,400	S	11,400	3,500	S
Mathematical and related scientists.....	3,800	S	S	S	S	S
Physical scientists.....	19,200	9,400	S	8,500	2,300	800
Psychologists.....	8,300	5,000	S	4,900	S	S
Social and related scientists.....	10,200	4,400	S	3,400	S	S
Total engineers <sup>2</sup> .....	78,700	53,600	13,300	50,100	17,400	3,900
Total other occupations.....	427,400	246,900	63,100	231,100	70,800	25,100
Managers and related occupations.....	51,100	35,200	14,600	31,400	12,500	2,600
Health and related occupations <sup>3</sup> .....	22,000	10,600	S	9,600	S	S
Educators other than S&E postsecondary.....	50,900	35,600	5,300	34,600	8,300	3,000
Social services and related occupations.....	33,500	27,800	5,900	27,600	9,300	3,600
Technicians including computer programmers.....	43,600	22,900	2,700	21,400	5,600	S
Sales and marketing occupations.....	62,000	38,500	13,800	36,900	10,600	S
Other occupations.....	164,300	76,200	19,800	69,600	23,300	10,400

<sup>1</sup> Respondents may have taken more than one type of work-related training. Therefore, column entries will not add to "Total employed who took any type of work-related training."

<sup>2</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>3</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
Training was during the period April 15, 1998, to April 15, 1999.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-14. Work-related training taken by employed science and engineering master's degree recipients in 1997 and 1998, by occupation: April 1999**

Occupation	Total employed	Total employed who took any type of work-related training <sup>1</sup>	Type of work-related training			
			Management training	Training in occupational field	General professional training	Other training
All occupations.....	139,200	92,800	20,000	86,700	23,600	6,800
Total scientists <sup>2</sup> .....	60,500	37,500	6,000	35,700	8,700	2,300
Computer and information scientists.....	26,200	17,300	3,700	16,700	4,800	S
Life and related scientists.....	6,400	3,300	S	3,200	S	S
Mathematical and related scientists.....	4,200	2,000	S	1,900	S	S
Physical scientists.....	6,300	3,400	S	3,100	1,000	S
Psychologists.....	10,200	8,000	S	7,800	S	S
Social and related scientists.....	7,300	3,500	S	3,100	S	S
Total engineers <sup>2</sup> .....	28,900	19,100	4,100	17,600	5,200	1,500
Total other occupations.....	49,800	36,200	9,900	33,500	9,600	3,100
Managers and related occupations.....	11,000	7,900	3,600	6,600	2,700	S
Health and related occupations <sup>3</sup> .....	2,000	1,500	S	1,400	S	S
Educators other than S&E postsecondary.....	7,400	6,000	S	5,700	1,600	S
Social services and related occupations.....	8,500	7,900	1,700	7,800	S	S
Technicians including computer programmers.....	7,200	3,900	S	3,700	1,300	S
Sales and marketing occupations.....	3,300	2,400	S	2,200	S	S
Other occupations.....	10,500	6,600	2,100	6,200	1,900	S

<sup>1</sup> Respondents may have taken more than one type of work-related training. Therefore, column entries will not add to "Total employed who took any type of work-related training."

<sup>2</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>3</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
Training was during the period April 15, 1998, to April 15, 1999.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-15. Work-related training taken by employed science and engineering bachelor's degree recipients in 1997 and 1998, by sector of employment: April 1999**

Sector of employment	Total employed	Total employed who took any type of work-related training <sup>1</sup>	Work-related training			
			Management training	Technical training	General professional training	Other training
All sectors.....	625,600	367,700	86,400	344,700	108,200	33,200
Private industry and business (non-educational).....	420,500	245,800	61,700	229,700	70,900	20,800
Private, for-profit company <sup>2</sup> .....	367,400	210,700	54,200	197,000	62,200	15,100
Nonprofit organizations.....	44,900	31,100	7,100	28,800	8,300	5,300
Self-employed <sup>2</sup> .....	8,100	4,000	S	3,900	S	S
Educational institution.....	139,700	74,700	12,500	69,900	20,000	6,700
4-year college and university <sup>3</sup> .....	80,200	32,600	4,300	28,900	8,700	2,900
Other educational <sup>4</sup> .....	59,400	42,100	8,200	40,900	11,300	3,900
Government.....	65,400	47,300	12,200	45,200	17,300	5,700
Federal Government.....	23,200	15,800	5,500	15,000	6,700	2,000
State or local government.....	42,200	31,400	6,700	30,200	10,700	3,700

<sup>1</sup> Respondents may have taken more than one type of work-related training. Therefore, column entries will not add to "Total employed who took any type of work-related training."

<sup>2</sup> Persons reporting they were self-employed, but in an incorporated business, are classified as "private, for-profit."

<sup>3</sup> Includes university-affiliated medical schools or research organizations.

<sup>4</sup> Includes elementary, middle, secondary, and less than 4-year colleges or other educational institutions.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

Training was during the period April 15, 1998, to April 15, 1999.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table D-16. Work-related training taken by employed science and engineering master's degree recipients in 1997 and 1998, by sector of employment: April 1999**

Sector of employment	Total employed	Total employed who took any type of work-related training <sup>1</sup>	Work-related training			
			Management training	Technical training	General professional training	Other training
All sectors.....	139,200	92,800	20,000	86,700	23,600	6,800
Private industry and business (non-educational).....	85,600	59,000	13,200	54,900	15,800	4,100
Private, for-profit company <sup>2</sup> .....	73,300	49,500	11,100	45,800	14,100	3,500
Nonprofit organizations.....	9,500	7,300	1,800	7,000	1,400	S
Self-employed <sup>2</sup> .....	2,800	2,100	S	2,100	S	S
Educational institution.....	37,200	21,000	3,500	19,800	4,200	1,800
4-year college and university <sup>3</sup> .....	25,300	11,100	1,700	10,100	2,200	1,200
Other educational <sup>4</sup> .....	11,900	9,900	1,700	9,800	2,000	S
Government.....	16,400	12,800	3,300	12,000	3,600	S
Federal Government.....	7,100	5,100	1,400	4,700	1,600	S
State or local government.....	9,300	7,700	1,800	7,300	2,000	S

<sup>1</sup> Respondents may have taken more than one type of work-related training. Therefore, column entries will not add to "Total employed who took any type of work-related training."

<sup>2</sup> Persons reporting they were self-employed, but in an incorporated business, are classified as "private, for-profit."

<sup>3</sup> Includes university-affiliated medical schools or research organizations.

<sup>4</sup> Includes elementary, middle, secondary, and less than 4-year colleges or other educational institutions.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.  
Training was during the period April 15, 1998, to April 15, 1999.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table E-1. Sector of employment of science and engineering bachelor's degree recipients in 1997 and 1998, by occupation: April 1999**

Occupation	Total employed	Sector of employment		
		Private industry and business (non-educational) <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All occupations.....	625,600	420,500	139,700	65,400
Total scientists <sup>4</sup> .....	119,500	73,400	36,900	9,200
Computer and information scientists.....	52,700	46,400	4,200	2,200
Life and related scientists.....	25,300	9,200	13,800	S
Mathematical and related scientists.....	3,800	S	2,900	S
Physical scientists.....	19,200	9,900	7,300	2,000
Psychologists.....	8,300	S	4,300	S
Social and related scientists.....	10,200	3,900	4,500	S
Total engineers <sup>4</sup> .....	78,700	64,100	8,800	5,800
Total other occupations.....	427,400	283,000	94,000	50,400
Managers and related occupations.....	51,100	43,100	3,200	4,800
Health and related occupations <sup>5</sup> .....	22,000	16,500	3,800	S
Educators other than S&E postsecondary.....	50,900	4,000	44,900	S
Social services and related occupations.....	33,500	15,700	6,600	11,200
Technicians including computer programmers.....	43,600	32,000	8,000	3,600
Sales and marketing occupations.....	62,000	60,100	S	S
Other occupations.....	164,300	111,700	26,000	26,600

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions. It also includes persons reporting they were self-employed.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

<sup>4</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>5</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table E-2. Sector of employment of science and engineering master's degree recipients in 1997 and 1998, by occupation: April 1999**

Occupation	Total employed	Sector of employment		
		Private industry and business (non-educational) <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All occupations.....	139,200	85,600	37,200	16,400
Total scientists <sup>4</sup> .....	60,500	36,000	19,600	4,900
Computer and information scientists.....	26,200	23,300	1,900	1,000
Life and related scientists.....	6,400	2,300	3,300	S
Mathematical and related scientists.....	4,200	1,200	2,700	S
Physical scientists.....	6,300	2,800	2,900	S
Psychologists.....	10,200	4,400	4,600	S
Social and related scientists.....	7,300	2,000	4,200	S
Total engineers <sup>4</sup> .....	28,900	21,800	4,000	3,000
Total other occupations.....	49,800	27,800	13,600	8,400
Managers and related occupations.....	11,000	7,300	1,400	2,200
Health and related occupations <sup>5</sup> .....	2,000	S	S	S
Educators other than S&E postsecondary.....	7,400	S	6,600	S
Social services and related occupations.....	8,500	3,700	2,600	2,200
Technicians including computer programmers.....	7,200	5,600	1,100	S
Sales and marketing occupations.....	3,300	3,200	S	S
Other occupations.....	10,500	6,200	1,300	3,000

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions. It also includes persons reporting they were self-employed.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal government, military, and commissioned corps.

<sup>4</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>5</sup> Health-related majors are not included in sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table E-3. Sector of employment of science and engineering bachelor's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total employed	Sector of employment		
		Private industry and business (non-educational) <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All science and engineering fields.....	625,600	420,500	139,700	65,400
Total science.....	519,000	333,100	129,400	56,400
Computer and information sciences.....	43,300	36,400	4,100	2,800
Life and related sciences, total.....	121,300	75,300	34,900	11,200
Agricultural and food sciences.....	13,300	10,200	2,200	S
Biological sciences.....	96,200	56,800	31,100	8,300
Environmental life sciences including forestry science.....	11,800	8,200	S	S
Mathematical and related sciences.....	21,300	12,000	8,000	1,200
Physical and related sciences, total.....	30,900	17,100	11,700	2,100
Chemistry, except biochemistry.....	15,800	9,000	6,200	S
Earth sciences, geology, and oceanography.....	8,200	4,700	2,500	900
Physics and astronomy.....	6,400	3,100	2,800	500
Other physical sciences.....	S	S	S	S
Psychology.....	123,800	71,800	37,000	15,100
Social and related sciences, total.....	178,400	120,600	33,800	24,000
Economics.....	28,700	24,900	2,800	S
Political science and related sciences.....	55,300	37,300	8,700	9,300
Sociology and anthropology.....	61,300	36,100	14,600	10,500
Other social sciences.....	33,100	22,200	7,600	3,200
Total engineering.....	106,600	87,400	10,200	9,000
Aerospace and related engineering.....	2,100	1,400	300	400
Chemical engineering.....	11,100	9,700	1,100	S
Civil and architectural engineering.....	18,900	14,000	1,700	3,200
Electrical, electronic, computer and communications engineering.....	32,400	27,600	2,800	1,900
Industrial engineering.....	5,400	5,000	S	S
Mechanical engineering.....	24,700	21,400	1,800	1,600
Other engineering.....	12,000	8,400	2,200	1,400

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions. It also includes persons reporting they were self-employed.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table E-4. Sector of employment of science and engineering master's degree recipients in 1997 and 1998, by major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total employed	Sector of employment		
		Private industry and business (non-educational) <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All science and engineering fields.....	139,200	85,600	37,200	16,400
Total science.....	96,800	53,100	31,800	11,900
Computer and information sciences.....	19,200	16,800	2,000	S
Life and related sciences, total.....	13,000	6,000	5,000	2,000
Agricultural and food sciences.....	2,100	S	S	S
Biological sciences.....	8,400	3,500	3,700	S
Environmental life sciences including forestry science.....	2,500	1,600	S	S
Mathematical and related sciences.....	6,200	2,500	3,400	S
Physical and related sciences, total.....	7,700	3,600	3,400	700
Chemistry, except biochemistry.....	3,000	1,600	1,300	S
Earth sciences, geology, and oceanography.....	2,700	1,400	800	S
Physics and astronomy.....	1,900	600	1,200	S
Other physical sciences.....	S	S	S	S
Psychology.....	25,900	12,600	9,900	3,400
Social and related sciences, total.....	24,800	11,600	8,100	5,100
Economics.....	3,800	2,600	S	S
Political science and related sciences.....	8,800	3,900	2,500	2,400
Sociology and anthropology.....	3,900	1,400	1,900	S
Other social sciences.....	8,300	3,800	2,900	1,600
Total engineering.....	42,400	32,500	5,400	4,500
Aerospace and related engineering.....	1,300	700	S	S
Chemical engineering.....	1,900	1,500	S	S
Civil and architectural engineering.....	6,100	4,200	S	1,100
Electrical, electronic, computer and communications engineering.....	15,000	12,400	1,500	1,100
Industrial engineering.....	3,400	2,800	S	S
Mechanical engineering.....	6,200	4,900	900	S
Other engineering.....	8,300	5,900	1,300	1,200

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions. It also includes persons reporting they were self-employed.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Details may not add to totals because of rounding.

These estimates of 1997 and 1998 college graduates are obtained from a sample survey of individuals receiving bachelor's or master's degrees in science or engineering fields.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-1. Median salary of full-time employed science and engineering bachelor's degree recipients in 1997 and 1998, by sex, race/ethnicity, and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total <sup>1</sup>	Sex		Race/ethnicity			
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander
All science and engineering fields.....	\$30,000	\$35,000	\$26,600	\$30,000	\$29,000	\$30,000	\$36,000
Total science.....	27,900	30,000	26,000	27,000	27,000	28,000	32,500
Computer and information sciences.....	44,000	45,000	41,000	44,000	40,000	45,000	44,000
Life and related sciences, total.....	25,000	26,500	25,000	25,000	25,000	28,000	28,000
Agricultural and food sciences.....	26,500	28,000	24,000	26,000	S	S	S
Biological sciences.....	25,000	26,000	25,000	24,700	25,000	28,000	27,800
Environmental life sciences including forestry science.....	26,000	28,000	21,000	25,000	S	S	S
Mathematical and related sciences.....	30,000	29,000	30,000	29,000	30,000	S	S
Physical and related sciences, total.....	28,500	30,000	27,500	28,000	30,000	26,400	31,000
Chemistry, except biochemistry.....	28,500	29,000	28,000	28,900	28,000	25,000	S
Earth sciences, geology, and oceanography.....	26,000	27,000	23,000	25,000	S	S	S
Physics and astronomy.....	35,400	37,500	33,000	35,000	S	S	S
Other physical sciences.....	S	S	S	S	S	S	S
Psychology.....	25,000	27,000	25,000	25,000	25,500	26,000	S
Social and related sciences, total.....	27,900	30,000	26,000	27,000	27,000	28,000	33,000
Economics.....	35,000	35,000	35,000	33,000	S	S	38,000
Political science and related sciences.....	29,000	30,000	28,000	29,000	28,000	28,000	32,000
Sociology and anthropology.....	24,500	24,200	24,500	24,000	25,000	27,000	S
Other social sciences.....	26,000	30,000	25,000	26,000	32,000	26,000	S
Total engineering.....	42,500	43,000	42,000	42,000	40,000	42,000	45,000
Aerospace and related engineering.....	41,000	40,200	42,000	40,200	S	40,000	41,000
Chemical engineering.....	45,000	45,000	46,000	45,000	42,000	42,000	46,000
Civil and architectural engineering.....	37,000	37,000	37,000	37,000	37,000	33,000	S
Electrical, electronic, computer and communications engineering.....	46,000	46,000	47,000	46,000	45,000	46,000	47,000
Industrial engineering.....	41,000	41,000	42,000	41,000	40,000	40,000	S
Mechanical engineering.....	43,000	43,000	44,000	43,000	40,000	44,000	42,000
Other engineering.....	40,000	40,000	40,000	40,000	S	37,000	S

<sup>1</sup> Total includes American Indian/Alaskan Natives not shown separately because of insufficient sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-2. Median salary of full-time employed science and engineering master's degree recipients in 1997 and 1998, by sex, race/ethnicity, and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total <sup>1</sup>	Sex		Race/ethnicity			
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander
All science and engineering fields.....	\$46,000	\$50,200	\$38,000	\$43,000	\$42,000	\$40,000	\$55,000
Total science.....	40,000	46,000	36,000	38,000	40,000	37,200	54,000
Computer and information sciences.....	58,000	60,000	55,000	60,000	54,800	S	57,000
Life and related sciences, total.....	34,000	36,000	33,000	35,000	S	S	S
Agricultural and food sciences.....	34,500	S	S	34,500	S	S	S
Biological sciences.....	34,000	37,000	32,000	34,000	S	S	S
Environmental life sciences including forestry science.....	36,000	36,000	S	35,000	S	S	S
Mathematical and related sciences.....	44,000	44,000	44,000	40,000	S	S	S
Physical and related sciences, total.....	41,600	42,000	40,000	40,000	S	S	47,000
Chemistry, except biochemistry.....	43,000	43,500	42,000	42,000	S	S	S
Earth sciences, geology, and oceanography.....	37,000	40,000	34,000	37,000	S	S	S
Physics and astronomy.....	40,000	42,000	S	40,000	S	S	S
Other physical sciences.....	S	S	S	S	S	S	S
Psychology.....	32,000	33,000	31,000	32,000	34,000	31,000	S
Social and related sciences, total.....	40,000	41,000	37,000	40,000	38,000	40,000	S
Economics.....	45,000	50,000	S	45,000	S	S	S
Political science and related sciences.....	40,000	42,000	38,000	40,000	S	S	S
Sociology and anthropology.....	31,200	S	27,000	29,000	S	S	S
Other social sciences.....	38,000	38,300	37,000	39,000	35,000	S	S
Total engineering.....	55,000	55,000	50,000	54,000	53,000	47,000	57,000
Aerospace and related engineering.....	50,000	50,000	S	50,000	S	S	S
Chemical engineering.....	55,000	55,200	50,000	56,000	S	S	S
Civil and architectural engineering.....	45,000	45,000	43,000	44,000	S	S	S
Electrical, electronic, computer and communications engineering.....	60,000	60,000	60,000	60,000	55,000	S	60,000
Industrial engineering.....	55,000	56,000	48,000	56,000	S	S	S
Mechanical engineering.....	51,000	51,000	S	51,000	S	S	52,000
Other engineering.....	52,000	53,500	48,000	52,000	S	S	52,000

<sup>1</sup> Total includes American Indian/Alaskan Natives not shown separately because of insufficient sample.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-3. Median salary of full-time employed science and engineering bachelor's degree recipients in 1997 and 1998, by sex, race/ethnicity, and occupation: April 1999**

Occupation	Total <sup>1</sup>	Sex		Race/ethnicity			
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander
All occupations.....	\$30,000	\$35,000	\$26,600	\$30,000	\$29,000	\$30,000	\$36,000
Total scientists <sup>2</sup> .....	38,000	40,000	32,000	37,200	38,000	37,400	40,000
Computer and information scientists.....	45,000	45,000	44,500	45,000	46,000	45,000	45,000
Life and related scientists.....	27,000	27,000	27,000	27,000	S	S	S
Mathematical and related scientists.....	S	S	S	S	S	S	S
Physical scientists.....	31,000	28,000	32,000	31,000	S	28,500	S
Psychologists.....	22,400	S	22,400	S	S	S	S
Social and related scientists.....	29,000	29,000	29,000	28,000	S	S	S
Total engineers <sup>2</sup> .....	42,000	42,000	42,000	42,000	41,000	42,000	45,000
Total other occupations.....	26,500	29,000	25,000	26,000	26,500	28,000	30,000
Managers and related occupations.....	35,000	37,000	32,000	35,000	32,000	32,000	37,000
Health and related occupations <sup>3</sup> .....	23,000	25,000	21,000	23,000	27,000	S	S
Educators other than S&E postsecondary.....	25,000	25,000	25,000	24,500	27,000	30,000	S
Social services and related occupations.....	23,000	23,000	23,000	22,000	24,000	24,000	S
Technicians including computer programmers.....	31,500	35,000	26,400	30,000	33,000	35,000	35,200
Sales and marketing occupations.....	30,000	31,000	28,000	30,000	28,000	30,000	32,500
Other occupations.....	25,000	26,000	24,000	24,000	25,000	26,000	27,000

<sup>1</sup> Total includes American Indian/Alaskan Natives not shown separately because of insufficient sample.

<sup>2</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>3</sup> Health-related majors are not included in sample. Salaries are not representative of those received by health-related occupations.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-4. Median salary of full-time employed science and engineering master's degree recipients in 1997 and 1998, by sex, race/ethnicity, and occupation: April 1999**

Occupation	Total <sup>1</sup>	Sex		Race/ethnicity			
		Male	Female	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian or Pacific Islander
All occupations .....	\$46,000	\$50,200	\$38,000	\$43,000	\$42,000	\$40,000	\$55,000
Total scientists <sup>2</sup> .....	49,400	53,000	40,000	43,000	47,000	43,000	57,000
Computer and information scientists .....	58,000	60,000	55,000	55,000	53,000	60,000	60,000
Life and related scientists .....	34,000	36,000	34,000	34,000	S	S	S
Mathematical and related scientists .....	45,000	45,000	47,500	45,000	S	S	S
Physical scientists .....	42,000	43,000	42,000	42,000	S	S	S
Psychologists .....	30,000	S	28,000	30,000	S	S	S
Social and related scientists .....	40,000	43,000	38,000	40,000	S	S	S
Total engineers <sup>2</sup> .....	53,000	54,000	50,000	52,000	55,000	47,500	55,000
Total other occupations .....	37,000	42,000	34,000	36,000	35,000	34,000	48,000
Managers and related occupations .....	49,000	55,000	45,000	46,000	45,000	S	50,000
Health and related occupations <sup>3</sup> .....	40,000	S	S	S	S	S	S
Educators other than S&E postsecondary .....	33,000	33,000	34,000	33,000	32,000	S	S
Social services and related occupations .....	30,000	33,000	30,000	30,000	31,200	S	S
Technicians including computer programmers .....	45,000	46,000	40,000	41,100	S	S	46,600
Sales and marketing occupations .....	43,200	48,000	38,000	45,000	S	S	S
Other occupations .....	33,000	40,000	30,000	33,500	S	S	S

<sup>1</sup> Total includes American Indian/Alaskan Natives not shown separately because of insufficient sample.

<sup>2</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>3</sup> Health-related majors are not included in sample. Salaries are not representative of those received by health-related occupations.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-5. Median salary of full-time employed science and engineering bachelor's degree recipients in 1997 and 1998, by broad sector of employment and major field of degree: April 1999**

Major field of 1997-98 S&E bachelor's degree	Total	Broad sector of employment		
		Private industry and business <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All science and engineering fields.....	\$30,000	\$33,000	\$24,000	\$27,000
Total science.....	27,900	30,000	24,000	26,000
Computer and information sciences.....	44,000	45,000	S	34,000
Life and related sciences, total.....	25,000	26,500	23,000	25,000
Agricultural and food sciences.....	26,500	27,000	S	S
Biological sciences.....	25,000	26,000	23,000	26,500
Environmental life sciences including forestry sciences.....	26,000	28,000	S	S
Mathematical and related sciences.....	30,000	35,800	26,000	S
Physical and related sciences, total.....	28,500	30,000	25,000	26,000
Chemistry, except biochemistry.....	28,500	31,000	25,000	S
Earth sciences, geology, and oceanography.....	26,000	27,000	21,600	26,000
Physics and astronomy.....	35,400	40,000	26,000	S
Other physical sciences.....	S	S	S	S
Psychology.....	25,000	26,000	23,500	25,000
Social and related sciences, total.....	27,900	29,900	24,000	26,000
Economics.....	35,000	35,000	S	S
Political science and related sciences.....	29,000	30,000	24,000	27,000
Sociology and anthropology.....	24,500	25,000	24,000	25,000
Other social sciences.....	26,000	28,000	24,000	26,200
Total engineering.....	42,500	43,000	32,000	34,000
Aerospace and related engineering.....	41,000	43,000	S	30,000
Chemical engineering.....	45,000	46,000	S	S
Civil and architectural engineering.....	37,000	38,000	S	33,000
Electrical, electronic, computer and communications engineering.....	46,000	47,000	S	40,000
Industrial engineering.....	41,000	42,000	S	S
Mechanical engineering.....	43,000	43,000	S	S
Other engineering.....	40,000	42,000	S	33,000

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-6. Median salary of full-time employed science and engineering master's degree recipients in 1997 and 1998, by broad sector of employment and major field of degree: April 1999**

Major field of 1997-98 S&E master's degree	Total	Broad sector of employment		
		Private industry and business <sup>1</sup>	Educational institution <sup>2</sup>	Government <sup>3</sup>
All science and engineering fields.....	\$46,000	\$50,000	\$33,000	\$40,000
Total science.....	40,000	46,000	32,000	37,000
Computer and information sciences.....	58,000	59,000	S	S
Life and related sciences, total.....	34,000	43,000	31,000	34,000
Agricultural and food sciences.....	34,500	S	S	S
Biological sciences.....	34,000	45,000	30,000	S
Environmental life sciences including forestry sciences.....	36,000	36,000	S	S
Mathematical and related sciences.....	44,000	50,000	33,000	S
Physical and related sciences, total.....	41,600	44,000	28,300	37,000
Chemistry, except biochemistry.....	43,000	45,000	S	S
Earth sciences, geology, and oceanography.....	37,000	42,000	S	S
Physics and astronomy.....	40,000	47,000	S	S
Other physical sciences.....	S	S	S	S
Psychology.....	32,000	31,200	31,000	33,000
Social and related sciences, total.....	40,000	40,000	34,500	40,000
Economics.....	45,000	45,000	S	S
Political science and related sciences.....	40,000	41,000	S	40,000
Sociology and anthropology.....	31,200	27,000	S	S
Other social sciences.....	38,000	37,000	34,500	41,100
Total engineering.....	55,000	55,000	35,000	50,000
Aerospace and related engineering.....	50,000	51,000	S	S
Chemical engineering.....	55,000	55,000	S	S
Civil and architectural engineering.....	45,000	44,000	S	47,800
Electrical, electronic, computer and communications engineering.....	60,000	60,000	S	56,000
Industrial engineering.....	55,000	56,000	S	S
Mechanical engineering.....	51,000	52,000	S	S
Other engineering.....	52,000	55,000	S	50,000

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-7. Median salary of full-time employed science and engineering bachelor's degree recipients in 1997 and 1998, by broad sector of employment and occupation: April 1999**

Occupation	Total	Broad sector of employment		
		Private industry and business <sup>1</sup>	Educational institutions <sup>2</sup>	Government <sup>3</sup>
All occupations.....	\$30,000	\$33,000	\$24,000	\$27,000
Total scientists <sup>4</sup> .....	38,000	40,000	23,700	30,000
Computer and information scientists.....	45,000	45,000	37,000	S
Life and related scientists.....	27,000	30,000	21,000	S
Mathematical and related scientists.....	S	S	S	S
Physical scientists.....	31,000	31,000	S	26,200
Psychologists.....	22,400	S	S	S
Social and related scientists.....	29,000	28,500	S	S
Total engineers <sup>4</sup> .....	42,000	43,000	41,000	37,000
Total other occupations.....	26,500	28,000	24,000	25,300
Managers and related occupations.....	35,000	36,000	S	29,000
Health and related occupations <sup>5</sup> .....	23,000	23,000	S	S
Educators other than S&E postsecondary.....	25,000	20,000	25,000	S
Social services and related occupations.....	23,000	22,300	22,500	24,000
Technicians including computer programmers.....	31,500	35,000	24,000	25,000
Sales and marketing occupations.....	30,000	30,000	S	S
Other occupations.....	25,000	25,000	19,000	26,500

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

<sup>4</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>5</sup> Health-related majors are not included in sample. Salaries are not representative of those received by health-related occupations.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

**Table F-8. Median salary of full-time employed science and engineering master's degree recipients in 1997 and 1998, by broad sector of employment and occupation: April 1999**

Occupation	Total	Broad sector of employment		
		Private industry and business <sup>1</sup>	Educational institutions <sup>2</sup>	Government <sup>3</sup>
All occupations.....	\$46,000	\$50,000	\$33,000	\$40,000
Total scientists <sup>4</sup> .....	49,400	54,000	31,000	40,000
Computer and information scientists.....	58,000	60,000	S	50,000
Life and related scientists.....	34,000	44,000	26,300	S
Mathematical and related scientists.....	45,000	48,000	S	S
Physical scientists.....	42,000	43,500	S	S
Psychologists.....	30,000	28,000	29,000	S
Social and related scientists.....	40,000	40,000	S	S
Total engineers <sup>4</sup> .....	53,000	54,000	S	51,000
Total other occupations.....	37,000	40,000	33,000	37,000
Managers and related occupations.....	49,000	53,000	45,000	40,000
Health and related occupations <sup>5</sup> .....	40,000	S	S	S
Educators other than S&E postsecondary.....	33,000	S	33,000	S
Social services and related occupations.....	30,000	29,000	31,000	32,000
Technicians including computer programmers.....	45,000	46,000	S	S
Sales and marketing occupations.....	43,200	45,000	S	S
Other occupations.....	33,000	31,000	S	41,000

<sup>1</sup> Private industry and business includes all private for-profit and private not-for-profit companies, businesses, and organizations, except those reported as educational institutions.

<sup>2</sup> Educational institutions include elementary and secondary schools, 2-year and 4-year colleges and universities, medical schools, university-affiliated research organizations, and all other educational institutions.

<sup>3</sup> Government includes local, state, and Federal Government, military, and commissioned corps.

<sup>4</sup> Science and engineering occupations include postsecondary educators. For more details, see technical notes.

<sup>5</sup> Health-related majors are not included in sample. Salaries are not representative of those received by health-related occupations.

**KEY:** S = Data with weighted values less than 100 or unweighted sample sizes less than 20 are suppressed for reasons of data reliability.

**NOTES:** Salary data are for principal job only. Full-time employed are those working at least 35 hours per week at their principal job. Self-employed persons and full-time students are excluded from salary data.

**SOURCE:** National Science Foundation/Division of Science Resources Statistics, National Survey of Recent College Graduates, 1999

SECTION C.  
SURVEY INSTRUMENT



# 1999 National Survey of Recent College Graduates

This information is solicited under the authority of the National Science Foundation Act of 1950, as amended. All information you provide will be treated as confidential and used only for research or statistical purposes by the survey sponsors, their contractors, and collaborating researchers for the purpose of analyzing data and preparing scientific reports and articles. Any information publicly released (such as statistical summaries) will be in a form that does not personally identify you. Your response is voluntary and failure to provide some or all of the requested information will not in any way adversely affect you. Actual time to complete the questionnaire may vary depending on your circumstances. On the average, it will take about 25 minutes to complete the questionnaire. If you have any comments on the time required for this survey, please send them to Suzanne H. Plimpton, Division of Administrative Services, National Science Foundation, 4201 Wilson Boulevard, Suite 295, Arlington, VA 22230. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB number for this project is 3145-0077.

**Conducted by:**

**Westat  
Rockville, MD**

**for the  
National Science Foundation  
Arlington, VA**

## INSTRUCTIONS

**Thank you for taking the time to complete this important questionnaire. Directions for filling it out are provided with each question. Because not all questions will apply to everyone, you may be asked to skip certain questions.**

- ☐ In order to get comparable data, we will be asking you to refer to the week of April 15, 1999 (i.e., April 11-April 17, 1999) when answering most questions.
- ☐ Follow all "SKIP" instructions after marking a box. If no "SKIP" instruction is provided, you should continue to the next question.
- ☐ Either a pen or pencil may be used.
- ☐ When answering questions that require marking a box, please use an [X].
- ☐ If you need to change an answer, please make sure that your old answer is either completely erased or clearly crossed out.
- ☐ You may notice that some question numbers are not consecutive. This was done to maintain consistency with previous survey cycles. Please answer questions in the order they are printed except when following a "SKIP" instruction.

**Thanks again for your help. We really appreciate it.**

# PART A - Education

A1. In what year did you receive your high school diploma or high school equivalency certificate?

YEAR  
19   OR ☐ Did not finish high school

A2. In what state or foreign country did you last attend high school?

State: \_\_\_\_\_ OR

Foreign Country: \_\_\_\_\_

A3. Have you ever taken courses at a community college?

1 ☐ Yes  
2 ☐ No ☐ SKIP to A4X

A4. (IF YES) For which of the following reasons have you taken courses at a community college?

Mark (X) Yes or No for each YES NO  
☐ ☐

b. As part of a high school advanced placement (AP) program ..... 1 ☐ 2 ☐

c. To prepare for college/increase chances of being accepted into college ..... 1 ☐ 2 ☐

d. To complete an associate's degree ... 1 ☐ 2 ☐

e. To complete credits toward a bachelor's degree ..... 1 ☐ 2 ☐

f. To gain further skills or knowledge in your academic or occupational field ..... 1 ☐ 2 ☐

g. To change your academic or occupational field ..... 1 ☐ 2 ☐

h. To increase opportunities for promotion, advancement, or higher salary ..... 1 ☐ 2 ☐

i. For leisure or personal interest ..... 1 ☐ 2 ☐

j. For financial reasons (e.g., 4-year college too expensive, needed the money for other priorities) ..... 1 ☐ 2 ☐

k. Other - Specify  1 ☐ 2 ☐

A4X. Do you have a 2-year associate's degree?

1 ☐ Yes  
2 ☐ No

A5. When you first entered college to begin working on a bachelor's degree, in what field of study did you want to major?

☐ ☐ MARK (X) THIS BOX IF YOU WERE UNDECIDED AND THEN SKIP TO A7

MAJOR FIELD OF STUDY

A6. Using the EDUCATION CODES (LIST A: pp. 16-17) choose the code that best describes your first intended major.

CODE

NOTE: Education codes range from 601 to 995

A7. Using a 4-point scale, what was your overall undergraduate grade point average (GPA)?

IF YOU HAVE MORE THAN ONE BACHELOR'S DEGREE: Give your overall grade point average for your first bachelor's degree.

Mark (X) ONLY one

1 ☐ 3.75 - 4.00 GPA (Mostly A's)  
2 ☐ 3.25 - 3.74 GPA (About half A's/half B's)  
3 ☐ 2.75 - 3.24 GPA (Mostly B's)  
4 ☐ 2.25 - 2.74 GPA (About half B's/half C's)  
5 ☐ 1.75 - 2.24 GPA (Mostly C's)  
6 ☐ 1.25 - 1.74 GPA (About half C's/half D's)  
7 ☐ Less than 1.25 (Mostly D's or below)  
8 ☐ Have not taken courses for which grades were given

(Question numbers A8-A9 were not used this cycle.)

A10. How many college or university degrees do you have at the bachelor's level or higher?

NUMBER

A10a. In what month and year did you first enroll in a course offered by a college or other postsecondary institution for which you received credit towards your first bachelor's degree? This may be at the institution that granted your degree, or at another institution.

Month Year  
  19

**A11. Starting with your most recent college or university degree, please provide the following information for each degree you have at the bachelor's level or higher.**

*If more than 3 relevant degrees, complete the grid for your two most recent degrees and your first bachelor's degree.*

MOST RECENT DEGREE	2ND MOST RECENT DEGREE	1ST BACHELOR'S DEGREE (If not previously reported)
<p>a. From which college/university and department did you receive this degree?</p> <p>_____ (College/University Name)</p> <p>_____ (Department)</p> <p>_____ (City/Town)</p> <p>_____ (State/Foreign Country)</p>	<p>a. From which college/university and department did you receive this degree?</p> <p>_____ (College/University Name)</p> <p>_____ (Department)</p> <p>_____ (City/Town)</p> <p>_____ (State/Foreign Country)</p>	<p>a. From which college/university and department did you receive this degree?</p> <p>_____ (College/University Name)</p> <p>_____ (Department)</p> <p>_____ (City/Town)</p> <p>_____ (State/Foreign Country)</p>
<p>b. In what month and year was this degree awarded?</p> <p>Month Year</p> <p><input type="text"/><input type="text"/> 19 <input type="text"/><input type="text"/></p>	<p>b. In what month and year was this degree awarded?</p> <p>Month Year</p> <p><input type="text"/><input type="text"/> 19 <input type="text"/><input type="text"/></p>	<p>b. In what month and year was this degree awarded?</p> <p>Month Year</p> <p><input type="text"/><input type="text"/> 19 <input type="text"/><input type="text"/></p>
<p>c. What type of degree did you receive?</p> <p>Mark (X) ONLY one</p> <p>1 <input type="checkbox"/> Bachelor's</p> <p>2 <input type="checkbox"/> Master's (includes MBA)</p> <p>3 <input type="checkbox"/> Doctorate (e.g., Ph.D., D.S.C., D.Sc., Ed.D.)</p> <p>4 <input type="checkbox"/> Other professional degree (e.g., JD, I.B., ThD., MD, DDS, etc.) - Specify <input type="text"/></p> <p>91 <input type="checkbox"/> Other - Specify <input type="text"/></p>	<p>c. What type of degree did you receive?</p> <p>Mark (X) ONLY one</p> <p>1 <input type="checkbox"/> Bachelor's</p> <p>2 <input type="checkbox"/> Master's (includes MBA)</p> <p>3 <input type="checkbox"/> Doctorate (e.g., Ph.D., D.S.C., D.Sc., Ed.D.)</p> <p>4 <input type="checkbox"/> Other professional degree (e.g., JD, I.B., ThD., MD, DDS, etc.) - Specify <input type="text"/></p> <p>91 <input type="checkbox"/> Other - Specify <input type="text"/></p>	<p>c. What type of degree did you receive?</p> <p>Mark (X) ONLY one</p> <p>1 <input type="checkbox"/> Bachelor's</p> <p>2 <input type="checkbox"/> Master's (includes MBA)</p> <p>3 <input type="checkbox"/> Doctorate (e.g., Ph.D., D.S.C., D.Sc., Ed.D.)</p> <p>4 <input type="checkbox"/> Other professional degree (e.g., JD, I.B., ThD., MD, DDS, etc.) - Specify <input type="text"/></p> <p>91 <input type="checkbox"/> Other - Specify <input type="text"/></p>
<p>d. Using the EDUCATION CODES (LIST A: pp. 16-17), select the relevant degree field code(s) and title(s).</p> <p>MAJOR FIELD <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p> <p>SECOND MAJOR OR MINOR <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p>	<p>d. Using the EDUCATION CODES (LIST A: pp. 16-17), select the relevant degree field code(s) and title(s).</p> <p>MAJOR FIELD <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p> <p>SECOND MAJOR OR MINOR <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p>	<p>d. Using the EDUCATION CODES (LIST A: pp. 16-17), select the relevant degree field code(s) and title(s).</p> <p>MAJOR FIELD <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p> <p>SECOND MAJOR OR MINOR <input type="text"/></p> <p>CODE <input type="text"/><input type="text"/><input type="text"/></p>
<p>e. From which of the following sources, if any, did you receive financial support for this degree?</p> <p>Mark (X) all that apply</p> <p>g <input type="checkbox"/> Financial support from parents/spouse/other relatives, not to be repaid</p> <p>a <input type="checkbox"/> Loans from the school you attended, banks, federal or state government</p> <p>b <input type="checkbox"/> Loans from parents or other relatives</p> <p>c <input type="checkbox"/> Financial assistance from your employer</p> <p>d <input type="checkbox"/> Tuition waivers, fellowships, grants, scholarships</p> <p>e <input type="checkbox"/> Assistantships/Work Study</p> <p>f <input type="checkbox"/> Earnings from employment</p> <p>h <input type="checkbox"/> Other - Specify <input type="text"/></p>	<p>e. From which of the following sources, if any, did you receive financial support for this degree?</p> <p>Mark (X) all that apply</p> <p>g <input type="checkbox"/> Financial support from parents/spouse/other relatives, not to be repaid</p> <p>a <input type="checkbox"/> Loans from the school you attended, banks, federal or state government</p> <p>b <input type="checkbox"/> Loans from parents or other relatives</p> <p>c <input type="checkbox"/> Financial assistance from your employer</p> <p>d <input type="checkbox"/> Tuition waivers, fellowships, grants, scholarships</p> <p>e <input type="checkbox"/> Assistantships/Work Study</p> <p>f <input type="checkbox"/> Earnings from employment</p> <p>h <input type="checkbox"/> Other - Specify <input type="text"/></p>	<p>e. From which of the following sources, if any, did you receive financial support for this degree?</p> <p>Mark (X) all that apply</p> <p>g <input type="checkbox"/> Financial support from parents/spouse/other relatives, not to be repaid</p> <p>a <input type="checkbox"/> Loans from the school you attended, banks, federal or state government</p> <p>b <input type="checkbox"/> Loans from parents or other relatives</p> <p>c <input type="checkbox"/> Financial assistance from your employer</p> <p>d <input type="checkbox"/> Tuition waivers, fellowships, grants, scholarships</p> <p>e <input type="checkbox"/> Assistantships/Work Study</p> <p>f <input type="checkbox"/> Earnings from employment</p> <p>h <input type="checkbox"/> Other - Specify <input type="text"/></p>

For questions A12a and A12c, include the total amount borrowed from ALL sources, (e.g., government, private lenders, parents, relatives, friends). Include loans that have been repaid or forgiven. If your loans were consolidated, please estimate how much was borrowed for your undergraduate degrees and how much was borrowed for your graduate degrees.

A12a. Thinking about only the undergraduate degrees you completed before May 1999, what is the total amount you have borrowed from any source to finance your undergraduate degree(s)?

\$  .00 OR

☐ NONE ☐ **SKIP to A12c**

A12b. (IF ANY) As of the week of April 15, 1999 how much of this undergraduate amount did you still owe?

\$  .00 OR

☐ NONE

A12c. Thinking about only the graduate degrees you completed before May 1999, what is the total amount you have borrowed from any source to finance your graduate degree(s)?

☐ ☐ MARK (X) THIS BOX IF NO GRADUATE DEGREES, AND THEN SKIP TO A13\_1

\$  .00 OR

☐ NONE ☐ **SKIP to A13\_1**

A12d. (IF ANY) As of the week of April 15, 1999 how much of this graduate amount did you still owe?

\$  .00 OR ☐ NONE

Questions A13\_1 through A21a ask about college or university courses you may have taken since completing

A13\_1. Have you completed a degree since the week of April 15, 1999?

1 ☐ Yes ☐ **SKIP to A21a, page 4**

2 ☐ No

A13. Between completing your most recent degree and the week of April 15, 1999, did you take any college or university courses or enroll in a college or university for any other reason, such as completing a master's, PhD, medical, or law degree?

1 ☐ Yes ☐ **SKIP to A18, page 4**

2 ☐ No

A14. Which of the following were reasons why you were not enrolled or taking college courses during that time period?

Mark (X) Yes or No for each

YES NO  
☐ ☐

1. You had achieved your educational goals (at least temporarily) ..... 1 ☐ 2 ☐
2. You were waiting for the next school term to start ..... 1 ☐ 2 ☐
3. Financial reasons (e.g., too expensive, needed the money for other priorities) ..... 1 ☐ 2 ☐
4. Had a job, needed to work ..... 1 ☐ 2 ☐
5. Had to stop due to family responsibilities (e.g., caring for children or other family members, had a baby) ..... 1 ☐ 2 ☐
6. Moved, could no longer take courses at the school you were attending ..... 1 ☐ 2 ☐
7. No longer certain of which field of study you wanted to pursue ..... 1 ☐ 2 ☐
8. Needed a break, tired of going to school ..... 1 ☐ 2 ☐
9. Other - *Specify*  ..... 1 ☐ 2 ☐

A14a. Which two reasons marked in A14 represent your most important reasons for not taking college courses during that time period? Enter number of appropriate reason from A14 above.

1.  MOST important reason

2.  SECOND MOST important reason  
(Enter "0" if only one reason selected in A14.)

A15. Have you taken any college or university courses since the week of April 15, 1999?

1 ☐ Yes ☐ **SKIP to A25, page 5**

2 ☐ No

A16. (IF NO) How likely is it that you will one day take additional college or university courses?

Mark (X) ONLY one

1 ☐ Very likely

2 ☐ Somewhat likely

3 ☐ Very unlikely

➔ **SKIP to A25, page 5**

(Question number A17 not used this cycle.)

**A18. What was your primary field of study between completing your most recent degree and the week of April 15, 1999?**

☐ ☐ MARK (X) THIS BOX IF NO PRIMARY FIELD OF STUDY AND THEN SKIP TO A20

PRIMARY FIELD OF STUDY

**A19. Using the EDUCATION CODES (LIST A: pp. 16-17) choose the code that best describes your primary field of study during that time.**

CODE

NOTE: Education codes range from 601 to 995

**A18a. In which college or university department were you primarily taking classes or doing research (for example, English, chemistry)?**

DEPARTMENT

**A20. During that time, toward what degree or certificate, if any, were you (or are you) working?**

IF WORKING ON MORE THAN ONE DEGREE: *Mark the highest level.*

Mark (X) *ONLY one*

- 0 ☐ No specific degree or certificate  
1 ☐ Bachelor's degree  
2 ☐ Post-baccalaureate certificate  
3 ☐ Master's degree (including MBA)  
4 ☐ Post master's certificate  
5 ☐ Doctorate (Ph.D., D.S.C, D.Sc., Ed.D.)  
6 ☐ Other professional degree (JD, LLB, ThD, MD, DDS, etc.) - *Specify*

91 ☐ Other - *Specify*

**A21. From which of these sources did you receive financial support for coursework or enrollment between completing your most recent degree and April 15, 1999?**

Mark (X) Yes or No for each

YES NO

☐

- g. Financial support from parents/spouse/other relatives, not to be repaid ..... 1 ☐ 2 ☐  
a. Loans from the school you attended, banks, federal or state government .... 1 ☐ 2 ☐  
b. Loans from parents or other relatives ... 1 ☐ 2 ☐  
c. Financial assistance from your employer ..... 1 ☐ 2 ☐  
d. Tuition waivers, fellowships, grants, or scholarships ..... 1 ☐ 2 ☐  
e. Assistantships/Work Study ..... 1 ☐ 2 ☐  
f. Earnings from employment ..... 1 ☐ 2 ☐  
h. Other - *Specify*  1 ☐ 2 ☐

**A21a. For which of the following reasons were you taking classes or enrolled during that time?**

Mark (X) Yes or No for each

YES NO

☐

- a. To gain further education before beginning a career ..... 1 ☐ 2 ☐  
b. To prepare for graduate school ..... 1 ☐ 2 ☐  
c. To change your academic or occupational field ..... 1 ☐ 2 ☐  
d. To gain further skills or knowledge in your academic or occupational field .. 1 ☐ 2 ☐  
e. For licensure or certification ..... 1 ☐ 2 ☐  
f. To increase opportunities for promotion, advancement, or higher salary ..... 1 ☐ 2 ☐  
g. Required or expected by employer .... 1 ☐ 2 ☐  
h. For leisure or personal interest ..... 1 ☐ 2 ☐  
i. Other - *Specify*  1 ☐ 2 ☐

**A22.** More specifically, during the week of April 15, 1999, were you either taking college or university courses or enrolled for other reasons such as completing a master's, PhD, medical, or law degree?

MARK "YES": *If you were enrolled in school but on vacation that week.*

- 1 ☐ Yes  
2 ☐ No ☐ **SKIP to A25**

**A23.** (IF YES) What college or university were you attending during the week of April 15, 1999?  
*Please do not abbreviate the school name.*

School Name: \_\_\_\_\_

City/Town: \_\_\_\_\_

State/Foreign Country: \_\_\_\_\_

**A24.** Were you taking courses as . . .

Mark (X) *ONLY one*

- 1 ☐ A part-time student  
2 ☐ A full-time student

**A25.** Thinking ahead to the future, what is the highest degree you ever expect to complete? *If your current highest degree is the highest degree you expect to complete, please answer for that degree.*

Mark (X) *ONLY one*

- 1 ☐ Bachelor's  
2 ☐ Master's (includes MBA)  
3 ☐ Doctorate (e.g., Ph.D., D.S.C., D.Sc., Ed.D.)  
4 ☐ Other professional degree (e.g., JD, LLB, ThD, MD, DDS, etc.) - *Specify* ↘

91 ☐ Other- *Specify* ↘

## PART B - Employment Status

**B1.** At any time during the three months following the completion of your most recent degree, did you have what you considered to be a "career-path" job? *For "most recent degree," please do not include any degrees awarded after April 1999.*

*A "career-path" job is a job that will help you in your future career plans or a job in the field in which you want to make your career.*

- 1 ☐ Yes ☐ **SKIP to B2**  
2 ☐ No

**B1a.** At any time during that same three-month period, did you accept what you considered to be a "career-path" job?

- 1 ☐ Yes  
2 ☐ No ☐ **SKIP to B3**

**B2.** (IF YES) When did you first start working for that employer?

IN THE ANSWER CATEGORIES BELOW: *For "most recent degree," please do not include any degrees awarded after April 1999.*

Mark (X) *ONLY one*

- 1 ☐ Before working on your most recent degree  
2 ☐ While working on your most recent degree  
3 ☐ After completing your most recent degree

➔ **SKIP TO B4, page 6**

**B3.** (IF NO) At any time during that same three-month period were you seeking a "career-path" job?

- 1 ☐ Yes  
2 ☐ No

The next several questions are about your employment status during the reference week of April 11-17, 1999.

**B4.** Were you working for pay (or profit) during the week of April 15, 1999? Please include self-employment and any jobs from which you were temporarily absent, for example, for illness, vacation, or parental leave (even if leave was unpaid).

STUDENTS: Count jobs required as part of a financial aid award, such as work study or assistantships. Do not count financial aid awards with no work requirement.

- 1 ☐ Yes ☐ **SKIP to B10**  
2 ☐ No

**B5.** (IF NO) Did you look for work during the four weeks preceding April 15, 1999 (that is, anytime between March 19 and April 15, 1999)?

- 1 ☐ Yes  
2 ☐ No

**B6.** What were your reasons for not working during the week of April 15, 1999?

Mark (X) Yes or No for each

- |  | Year Retired                                 | YES                      | NO                       |
|--|--|--------------------------|--------------------------|
| a. Retired                                 | 19 <input type="text"/> <input type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. On layoff from a job                    |  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Student                                 |  | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Family responsibilities                 |  | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Chronic illness or permanent disability |  | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Suitable job not available              |  | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Did not need or want to work            |  | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Other - Specify                         | <input type="text"/>                         | <input type="checkbox"/> | <input type="checkbox"/> |

**B7.** Prior to the week of April 15, 1999, in what month and year did you last work for pay (or profit)?

☐ ☐ MARK (X) THIS BOX IF NEVER WORKED FOR PAY (OR PROFIT) AND THEN SKIP TO PART D, PAGE 11

LAST WORKED      Month      Year  
                                19

**B8.** What kind of work were you doing on this last job--that is, what was your occupation? Please be as specific as possible, including any area of specialization.

EXAMPLE: High school teacher - Math

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B9.** Using the JOB CODES (LIST B: pp. 18-19), choose the code that best describes the work you were doing on this last job.

CODE    ☐ **SKIP to Part C, page 10**

NOTE: Job codes range from 010 to 500

**B10.** (IF WORKING DURING WEEK OF APRIL 15) Counting all jobs you held during the week of April 15, 1999, was your typical work week 35 hours or more per week?

- 1 ☐ Yes, worked 35 or more hours ☐ **SKIP to shaded box, page 7**  
2 ☐ No, worked less than 35 hours per week

**B10a.** (IF LESS THAN 35 HOURS) During the week of April 15, 1999, did you want to work a full-time work week of 35 or more hours?

- 1 ☐ Yes  
2 ☐ No

**B11.** (IF LESS THAN 35 HOURS) What were your reasons for working a part-time work week of less than 35 hours during the week of April 15, 1999?

Mark (X) Yes or No for each

- |   | Year Retired                                 | YES                      | NO                       |
|---|--|--------------------------|--------------------------|
| a. Retired or semi-retired                        | 19 <input type="text"/> <input type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Student  |  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Family responsibilities                        |  | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Chronic illness or permanent disability        |  | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Suitable full-time work week job not available |  | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Did not need or want to work full time         |  | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Other - Specify                                | <input type="text"/>                         | <input type="checkbox"/> | <input type="checkbox"/> |

Please answer the next series of questions for your principal job held during the week of April 15, 1999, that is, the job in which you worked the most hours during the week of April 15, 1999. A second job, if held, will be covered later.

**B11a. Who was your principal employer during the week of April 15, 1999?**

IF MORE THAN ONE JOB: *Record employer for whom you worked the most hours that week.*

IF EMPLOYER HAD MORE THAN ONE LOCATION: *Record location where you usually worked.*

Employer Name: \_\_\_\_\_

City or Town: \_\_\_\_\_

State/Foreign Country: \_\_\_\_\_

ZIP Code: \_\_\_\_\_

**B12. Which of the following categories best describes your employer during the week of April 15, 1999?**

IF EMPLOYER WAS A SCHOOL: *Mark (X) the type of organizational charter (e.g., mark "state government" for state schools or "local government" for schools run by the local school district. Most private schools are "private not-for-profit").*

*Mark (X) ONLY one*

- 1 ☐ A PRIVATE FOR-PROFIT company, business or individual, paying you wages, salary or commissions
- 2 ☐ A PRIVATE NOT-FOR-PROFIT, tax-exempt, or charitable organization
- 3 ☐ SELF-EMPLOYMENT in own NOT INCORPORATED business, professional practice, or farm
- 4 ☐ SELF-EMPLOYMENT in own INCORPORATED business, professional practice, or farm
- 5 ☐ Local GOVERNMENT (e.g., city, county)
- 6 ☐ State GOVERNMENT
- 7 ☐ U.S. military service, active duty, or Commissioned Corps (e.g., USPHS, NOAA)
- 8 ☐ U.S. GOVERNMENT as a civilian employee
- 91 ☐ Other - *Specify*

**B13a. Thinking about your April 1999 employer's main business, (that is, what that employer makes or does), under which of the following categories does that employer's *main business* best fit?**

IF PRINCIPAL EMPLOYER HAD MORE THAN ONE TYPE OF BUSINESS: *Please answer for the type of business primarily performed at the location where you worked.*

*Mark (X) ONLY one*

- 1 ☐ Agriculture, forestry, or fishing
- 2 ☐ Biotechnology
- 3 ☐ Construction or mining
- 4 ☐ Education
- 5 ☐ Finance, insurance or real estate services
- 6 ☐ Health services
- 7 ☐ Information technology or computer services
- 8 ☐ All other services (e.g., social, legal, business)
- 9 ☐ Manufacturing
- 10 ☐ Public administration/government
- 11 ☐ Research - *Specify*
- 12 ☐ Transportation services, utilities or communications
- 13 ☐ Wholesale or retail trade
- 14 ☐ Other

**B13b. Counting all locations where this employer operated, how many people worked for your April 1999 employer? Your best estimate is fine.**

*Mark (X) ONLY one*

- 1 ☐ Under 10 employees
- 2 ☐ 10-24 employees
- 3 ☐ 25-99 employees
- 4 ☐ 100-499 employees
- 5 ☐ 500-999 employees
- 6 ☐ 1,000-4,999 employees
- 7 ☐ 5,000+ employees

**B13c.** Did your April 1999 employer come into being as a new business within the past 5 years?

- 1 ☐ Yes  
2 ☐ No

**B14.** Was your principal employer an educational institution?

- 1 ☐ Yes  
2 ☐ No ☐ **SKIP to B16**

**B15A.** (IF EDUCATIONAL INSTITUTION) Was this educational institution . . .

Mark (X) ONLY one

- 1 ☐ A preschool, elementary, or middle school or system  
2 ☐ A secondary school or system  
3 ☐ A 2-year college, junior college, or technical institute  
4 ☐ A 4-year college or university, other than a medical school  
5 ☐ A medical school (including university-affiliated hospital or medical center)  
6 ☐ A university-affiliated research institute  
91 ☐ Something else - Specify

**B16.** What kind of work were you doing on your principal job held during the week of April 15, 1999--that is, what was your occupation?

Please be as specific as possible, including any area of specialization.

EXAMPLE: High school teacher - Math

**B17.** Using the JOB CODES (LIST B: pp. 18-19), choose the code that best describes the work you were doing on your principal job during the week of April 15, 1999.

CODE  NOTE: Job codes range from 010 to 500

**B18a.** Did your duties on this job require the technical expertise of a bachelor's degree or higher in . . .

Mark (X) Yes or No for each

YES NO  
☐

- a. Engineering, computer science, math, or the natural sciences . . . . . 1 ☐ 2 ☐  
b. The social sciences . . . . . 1 ☐ 2 ☐  
c. Some other field (e.g., health or business) - Specify

 1 ☐ 2 ☐

**B19.** During what month and year did you start this job, (that is, your principal job held during the week of April 15, 1999)?

JOB STARTED 

Month

 19 

Year

(Question number B20 not used this cycle.)

**B21.** Thinking about the relationship between your work and your education, to what extent was your work on your principal job held during the week of April 15, 1999, related to your highest degree field? For "highest degree," please do not include any degrees awarded after April 1999.

Mark (X) ONLY one

- 1 ☐ Closely related  
2 ☐ Somewhat related  
3 ☐ Not related

**B22.** (IF NOT RELATED) Did any of these factors influence your decision to work in an area OUTSIDE THAT DEGREE FIELD?

Mark (X) Yes or No for each

YES NO  
☐

1. Pay or promotion opportunities . . . . . 1 ☐ 2 ☐  
2. Working conditions (e.g., hours, equipment, working environment) . . . . . 1 ☐ 2 ☐  
3. Job location . . . . . 1 ☐ 2 ☐  
4. Change in career or professional interests . . . . . 1 ☐ 2 ☐  
5. Family-related reasons (e.g., children, spouse's job moved) . . . . . 1 ☐ 2 ☐  
6. Job in field not available . . . . . 1 ☐ 2 ☐  
7. Other reason - Specify

 1 ☐ 2 ☐

**B23.** Which two factors in B22 represent your most important reasons for working in an area outside that degree field? Enter number of appropriate factor from B22 on the previous page.

1.  MOST important reason
2.  SECOND MOST important reason  
(Enter "0" if only one factor selected in B22.)

**B24.** The next question is about your work activities on the principal job you held during the week of April 15, 1999. Which of the following work activities occupied 10 percent or more of your time during a typical work week on this job?

Mark (X) Yes or No for each

- |   | YES                        | NO                         |
|---|----------------------------|----------------------------|
|   | <input type="checkbox"/>   | <input type="checkbox"/>   |
| 1. Accounting, finance, contracts . . . . .   | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 2. Applied research - study directed toward gaining scientific knowledge to meet a recognized need . . . . .    | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 3. Basic research - study directed toward gaining scientific knowledge primarily for its own sake . . . . .     | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 4. Computer applications, programming, systems development . . . . .  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 5. Development - using knowledge gained from research for the production of materials, devices . . . . .        | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 6. Design of equipment, processes, structures, models . . . . .   | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 7. Employee relations - including recruiting, personnel development, training . . . . .                         | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 8. Managing and supervising . . . . .   | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 9. Production, operations, maintenance (e.g., truck driving, machine tooling, auto/machine repairing) . . . . . | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 10. Professional services (e.g., health care, counseling, financial services, legal services) . . . . .         | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 11. Sales, purchasing, marketing, customer service, public relations . . . . .                                  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 12. Quality or productivity management . . . . .  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 13. Teaching . . . . .  | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 14. Other - <i>Specify</i> <input type="text"/> . . . . .   | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |

**B25.** On which two activities in B24 did you work the most hours during a typical week on this job? Enter number of appropriate activity from B24.

1.  Activity MOST hours
2.  Activity SECOND MOST hours  
(Enter "0" if only one activity selected in B24.)

**B26.** Did you supervise the work of others as part of your principal job held during the week of April 15, 1999?

MARK "YES": If you assigned duties to workers and recommended or initiated personnel actions such as hiring, firing, or promoting.

TEACHERS: Do not count students.

- 1 ☐ Yes
- 2 ☐ No ☐ **SKIP to B28**

**B27.** (IF YES) How many people did you typically . . .

IF NONE: Enter "0."

Number Supervised

a. Supervise directly? . . . . .

b. Supervise through subordinate supervisors? . . .

**B28.** Before deductions, what was your basic annual salary on this job as of the week of April 15, 1999? (Do not include bonuses, overtime, or additional compensation for summertime teaching or research.)

IF NOT SALARIED: Please estimate your earned income, excluding business expenses.

Include tips as part of salary.

\$  .00

Basic Annual Salary/Earned Income

**B29.** During a typical week on this job, how many hours did you usually work?

NUMBER OF HOURS PER WEEK

**B29WEEKS.** Was your salary based on a full year, that is, 52 weeks, or something less than 52 weeks?

1 ☐ 52 weeks ☐ **SKIP to B35**

2 ☐ Something else

**B29a.** Including paid vacation and paid sick leave, on how many weeks per year was your salary based?

NUMBER OF WEEKS PER YEAR

(Question numbers B30-B34 not used in this cycle.)

**B35.** During the week of April 15, 1999, were you working for pay (or profit) at a second job (or business), including part-time, evening, or weekend work?

1 ☐ Yes

2 ☐ No ☐ **SKIP to Part C**

**B36.** (IF YES) What kind of work were you doing on your second job during the week of April 15, 1999--that is, what was your occupation? Please be as specific as possible, including any area of specialization.

IF MORE THAN TWO JOBS THAT WEEK: Answer for the job at which you worked the second most hours.

EXAMPLE: High school teacher - Math

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**B37.** Using the JOB CODES (LIST B: pp. 18-19), choose the code that best describes the work you were doing on your second job during the week of April 15, 1999.

CODE

NOTE: Job codes range from 010 to 500

**B39.** To what extent was your work on this second job related to your highest degree field? For "highest degree," please do not include any degrees awarded after April 1999.

Mark (X) ONLY one

1 ☐ Closely related

2 ☐ Somewhat related

3 ☐ Not related

## PART C - Other Work-Related Information

(Question number C1 not used this cycle.)

**C2.** During the past year, did you attend any professional society or association meetings or conferences? Please include regional, national, or international meetings.

1 ☐ Yes

2 ☐ No

**C3.** To how many national or international professional societies or associations do you currently belong?

Number   OR ☐ NONE

**C4.** During the past year, did you attend any work-related workshops, seminars, or other work-related training activities? Do not include college courses.

Do not include professional meetings unless you attended a special training session conducted at a meeting or conference.

1 ☐ Yes

2 ☐ No ☐ **SKIP to Part D, page 11**

**C5.** (IF YES) During the past year, in which of the following areas did you attend work-related workshops, seminars, or other work-related training activities?

Mark (X) Yes or No for each

YES NO  
☐ ☐

a. Management or supervisor training ..... 1 ☐ 2 ☐

b. Training in your occupational field ..... 1 ☐ 2 ☐


c. General professional training (e.g., public speaking, business writing) ..... 1 ☐ 2 ☐

d. Other work-related training - *Specify*  1 ☐ 2 ☐

**C6. For which of the following reasons did you attend training activities during the past year?**

Mark (X) Yes or No for each

YES NO  
☐ ☐

1. To facilitate a change in your occupational field ..... 1 ☐ 2 ☐
2. To gain further skills or knowledge in your occupational field ..... 1 ☐ 2 ☐
3. For licensure or certification .... 1 ☐ 2 ☐
4. To increase opportunities for promotion, advancement or higher salary ..... 1 ☐ 2 ☐
5. To learn skills or knowledge needed for a recently acquired position ..... 1 ☐ 2 ☐
6. Required or expected by employer ..... 1 ☐ 2 ☐
7. Other - Specify   
1 ☐ 2 ☐

**C7. Which of the reasons marked in C6 represents your most important reason for attending training activities? Enter number of appropriate reason from C6 above.**

MOST important reason

**PART D - Background Information**

**D1. What is your birthdate?**

Month Day Year  
 19

**D2. In what U.S. state, U.S. territory, or foreign country were you born?**

State/Territory: \_\_\_\_\_ OR

Foreign Country: \_\_\_\_\_

(Question number D3 not used this cycle.)

**D4DAD. What is the highest level of education completed by your father or male guardian?**

Mark (X) ONLY one

- 1 ☐ Less than high school diploma
- 2 ☐ High school diploma or equivalent
- 3 ☐ Some college, vocational, or trade school (including 2-year degrees)
- 4 ☐ Graduated from a 4-year college (Bachelor's degree)
- 5 ☐ At least some graduate or professional school

**D4MOM. What is the highest level of education completed by your mother or female guardian?**

Mark (X) ONLY one

- 1 ☐ Less than high school diploma
- 2 ☐ High school diploma or equivalent
- 3 ☐ Some college, vocational, or trade school (including 2-year degrees)
- 4 ☐ Graduated from a 4-year college (Bachelor's degree)
- 5 ☐ At least some graduate or professional school


**D5. Are you of Hispanic origin or descent?**

- 1 ☐ Yes  
2 ☐ No ☐ **SKIP to D7**

**D6. Which of the following categories best describes your Hispanic descent?**


IF MORE THAN ONE CATEGORY APPLIES: *Please select the one you consider the most important part of your background.*

Mark (X) *ONLY one*

- 1 ☐ Mexican, Mexican-American, Chicano  
2 ☐ Puerto Rican  
3 ☐ Cuban  
91 ☐ Some other Hispanic descent - *Specify* 

**D7. Are you . . .**

Mark (X) *ONLY one*

- 1 ☐ White  
2 ☐ Black or African American  
3 ☐ Asian or Pacific Islander  
4 ☐ American Indian or Alaskan Native (e.g., Eskimo, Aleut)  
91 ☐ Other - *Specify* 

**D8. Are you . . .**

- 1 ☐ Male  
2 ☐ Female


**D9. During the week of April 15, 1999, were you . . .**

Mark (X) *ONLY one*

- 1 ☐ A U.S. citizen  
2 ☐ Not a U.S. citizen ☐ **SKIP to D9\_2**

**D9\_1. (IF U.S. CITIZEN) Were you . . .**

Mark (X) *ONLY one*

- 1 ☐ A native-born citizen  
2 ☐ A naturalized citizen  **SKIP to D12**

**D9\_2. (IF NON-U.S. CITIZEN) During the week of April 15, 1999, did you have . . .**

Mark (X) *ONLY one*

- 3 ☐ A Permanent U.S. Resident Visa  
4 ☐ A Temporary U.S. Resident Visa  
5 ☐ No U.S. Visa - You were living outside the United States

**D10. (IF NON-U.S. CITIZEN) Of which country were you a citizen during the week of April 15, 1999?**

COUNTRY

(Question number D11 not used this cycle.)

**D12. During the week of April 15, 1999, were you living in the United States or one of its territories, or were you living in another country?**

- 1 ☐ United States or one of its territories  
2 ☐ Another country

**D13. As of the week of April 15, 1999, were you . . .**

Mark (X) *ONLY one*

- 1 ☐ Married ☐ **GO to D14, page 13**  
2 ☐ Widowed  
3 ☐ Separated  
4 ☐ Divorced  
5 ☐ Never Married

 **SKIP to D16, page 13**

**D14. (IF MARRIED) During the week of April 15, 1999, was your spouse working for pay (or profit) at a full-time or part-time job?**

- 1 ☐ Yes, full-time  
2 ☐ Yes, part-time  
3 ☐ No ☐ **SKIP to D16**

**D15. (IF YES) Did your spouse's duties on this job require the technical expertise of a bachelor's degree or higher in . . .**

Mark (X) Yes or No for each

YES NO  
☐ ☐

- a. Engineering, computer science,  
math or the natural sciences . . . . . 1 ☐ 2 ☐  
b. The social sciences . . . . . 1 ☐ 2 ☐  
c. Some other field (e.g., health or  
business) - *Specify* ↗

1 ☐ 2 ☐

**D16. During the week of April 15, 1999, did you have any children living with you as part of your family?**  
*Only count children who lived with you at least 50 percent of the time.*

- 1 ☐ Yes  
2 ☐ No ☐ **SKIP to D18, page 14**

**D17. (IF YES) How many of these children living with you as part of your family were . . .**

IF NO CHILDREN IN A CATEGORY: *Enter "0."*

	Number of Children
e. Under age 2 . . . . .	<input type="text"/>
f. Aged 2-5 . . . . .	<input type="text"/>
b. Aged 6-11 . . . . .	<input type="text"/>
c. Aged 12-17 . . . . .	<input type="text"/>
d. Aged 18 or older . . . . .	<input type="text"/>

**PLEASE go to D18, page 14**

The next question is designed to help us better understand the career paths of individuals with different physical

D18. What is the usual degree of difficulty you have with . . .

	MARK (X) ONE FOR EACH LINE				
	None	Slight	Moderate	Severe	Unable to Do
a. SEEING words or letters in ordinary newsprint (with glasses/contact lenses if you usually wear them)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
b. HEARING what is normally said in conversation with another person (with hearing aid, if you usually wear one)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
c. WALKING without human or mechanical assistance or using stairs	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
d. LIFTING or carrying something as heavy as 10 pounds, such as a bag of groceries	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

D18\_1. ☐ ☐ MARK (X) THIS BOX IF YOU ANSWERED "NONE" TO ALL ACTIVITIES IN D18 AND SKIP TO D22

D19. What is the earliest age at which you first began experiencing any difficulties in any of these areas?

AGE   OR ☐ SINCE BIRTH

D22. In case we need to clarify some of the information you have provided, please provide an address, telephone number(s), and any e-mail address (if applicable) where you can be reached.

Number and Street/Apt. No.

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

City/Town

State

Zip Code

Plus 4

Country (If outside U.S.)

Telephone Numbers:

Daytime 

Area Code	Number
<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

Evening 

Area Code	Number
<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

E-mail Address(es):

D22a. Does the name appearing on the back cover of this questionnaire match your current name?

☐ Yes ☐ **SKIP to D21 below**

☐ No



D22b. Please provide your current name.

--	--	--

First Name

Middle Name

Last Name

D21. Since we are interested in how education and employment change over time, we may be recontacting you in the future. To help us contact you, please provide the name, address, and telephone number of someone who is likely to know where you can be reached. **Do not include someone who lives in your household.** As with all the information provided in this questionnaire, complete confidentiality will be provided. This person will only be contacted if we have trouble contacting you in the future.

--	--	--

First Name

Middle Name

Last Name

--

Number and Street/Apt. No.

		-
--	--	---

City/Town

State

Zip Code

Plus 4

--

Country (If outside U.S.)

Area Code

Number

			-				-				
--	--	--	---	--	--	--	---	--	--	--	--

**THANK YOU FOR COMPLETING  
THE QUESTIONNAIRE**

# LIST A: EDUCATION CODES

This list is ordered alphabetically. The titles in bold type are broad fields of study. To make sure you have found the BEST code, please review ALL broad categories before making your choice. If you cannot find the code that BEST describes your field of study, use the "OTHER" code under the most appropriate broad field in bold print. If none of the codes fit your field of study, use Code 995.

## **Agriculture Business and Production**

- 601 Agriculture, economics (also see 655 and 923)
- 602 OTHER agricultural business and production

## **Agricultural Sciences**

- 605 Animal sciences
- 606 Food sciences and technology (also see 638)
- 607 Plant sciences (also see 633)
- 608 OTHER agricultural sciences

- 610 **Architecture/Environmental Design**  
(for architectural engineering, see 723)

- 620 **Area/Ethnic Studies**

## **Biological/Life Sciences**

- 631 Biochemistry and biophysics
- 632 Biology, general
- 633 Botany (also see 607)
- 634 Cell and molecular biology
- 635 Ecology
- 636 Genetics, animal and plant
- 637 Microbiology
- 638 Nutritional sciences (also see 606)
- 639 Pharmacology, human and animal (also see 788)
- 640 Physiology, human and animal
- 641 Zoology, general
- 642 OTHER biological sciences

## **Business Management/Administrative Services**

- 651 Accounting
- 652 Actuarial science
- 653 Business administration and management
- 654 Business, general
- 655 Business/managerial economics (also see 601 and 923)
- 656 Business marketing/marketing mgmt.
- 657 Financial management
- 658 Marketing research
- 843 Operations research
- 659 OTHER business management/admin. services

## **Communications**

- 661 Communications, general
- 662 Journalism
- 663 OTHER communications

## **Computer and Information Sciences**

- 671 Computer/information sciences, general
- 672 Computer programming
- 673 Computer science (also see 727)
- 674 Computer systems analysis
- 675 Data processing technology
- 676 Information services and systems
- 677 OTHER computer and information sciences

## **Conservation/Renewable Natural Resources**

- 680 Environmental science studies
- 681 Forestry sciences
- 682 OTHER conservation/renewable natural resources

- 690 **Criminal Justice/Protective Services**  
(also see 922)

## **Education**

- 701 Administration
- 702 Computer teacher education
- 703 Counselor education/guidance services
- 704 Educational psychology
- 705 Elementary teacher education
- 706 Mathematics teacher education
- 707 Physical education/coaching
- 708 Pre-elementary teacher education
- 709 Science teacher education
- 710 Secondary teacher education
- 711 Special education
- 712 Social science teacher education
- 713 OTHER education

## **Engineering**

- 721 Aerospace, aeronautical, astronautical engineering
- 722 Agricultural engineering
- 723 Architectural engineering
- 724 Bioengineering and biomedical engineering
- 725 Chemical engineering
- 726 Civil engineering
- 727 Computer/systems engineering (also see 673)
- 728 Electrical, electronics, communications engineering (also see 751)
- 729 Engineering sciences, mechanics, physics
- 730 Environmental engineering
- 731 General engineering
- 732 Geophysical engineering
- 733 Industrial engineering (also see 752)
- 734 Materials engineering, including ceramics and textiles
- 735 Mechanical engineering (also see 753)
- 736 Metallurgical engineering
- 737 Mining and minerals engineering
- 738 Naval architecture and marine engineering
- 739 Nuclear engineering
- 740 Petroleum engineering
- 741 OTHER engineering

# LIST A: EDUCATION CODES - Continued

## Engineering-Related Technologies

- 751 Electrical and electronic technologies
- 752 Industrial production technologies
- 753 Mechanical engineering-related technologies
- 754 OTHER engineering-related technologies

## Languages, Linguistics, Literature/Letters

- 760 English Language and Literature/Letters
- 771 Linguistics
- 772 OTHER foreign languages and literature

## Health Professions and Related Sciences

- 781 Audiology and speech pathology
- 782 Health services administration
- 783 Health/medical assistants
- 784 Health/medical technologies
- 785 Medical preparatory programs (e.g., pre-dentistry, pre-medical, pre-veterinary)
- 786 Medicine (e.g., dentistry, optometry, osteopathic, podiatry, veterinary)
- 787 Nursing (4 years or longer program)
- 788 Pharmacy (also see 639)
- 789 Physical therapy and other rehabilitation/therapeutic services
- 790 Public health (including environmental health and epidemiology)
- 791 OTHER health/medical sciences

## 800 Home Economics

## 810 Law/Prelaw/Legal Studies

## 820 Liberal Arts/General Studies

## 830 Library Science

## Mathematics

- 841 Applied (also see 843, 652)
- 842 Mathematics, general
- 843 Operations research
- 844 Statistics
- 845 OTHER mathematics

## 850 Parks, Recreation, Leisure, and Fitness Studies

## Philosophy, Religion, and Theology

- 861 Philosophy of science
- 862 OTHER philosophy, religion, theology

## Physical Sciences

- 871 Astronomy and astrophysics
- 872 Atmospheric sciences and meteorology
- 631 Biochemistry and biophysics
- 873 Chemistry
- 874 Earth sciences
- 680 Environmental science studies
- 875 Geology
- 876 Geological sciences, other
- 877 Oceanography
- 878 Physics
- 879 OTHER physical sciences

## Psychology

- 891 Clinical
- 892 Counseling
- 704 Educational
- 893 Experimental
- 894 General
- 895 Industrial/Organizational
- 896 Social
- 897 OTHER psychology

## Public Affairs

- 901 Public administration
- 902 Public policy studies
- 903 OTHER public affairs

## 910 Social Work

## Social Sciences and History

- 921 Anthropology and archeology
- 922 Criminology (also see 690)
- 923 Economics (also see 601 and 655)
- 924 Geography
- 925 History of science
- 926 History, other
- 927 International relations
- 928 Political science and government
- 929 Sociology
- 910 Social work
- 930 OTHER social sciences

## Visual and Performing Arts

- 941 Dramatic arts
- 942 Fine arts, all fields
- 943 Music, all fields
- 944 OTHER visual and performing arts

## 995 Other Fields (Not Listed)

# LIST B: JOB CODES LIST

This list is ordered ALPHABETICALLY. The titles in bold type are broad job categories. To make sure you have found the BEST code, please review ALL broad categories before making your choice. If you cannot find the code that BEST describes your job, use the "OTHER" code under the most appropriate broad category in bold print. If none of the codes fit your job, use Code 500.

## 010 **Artists, Broadcasters, Editors, Entertainers, Public Relations Specialists, Writers**

### **Biological/Life Scientists**

- 021 Agricultural and food scientists
- 022 Biochemists and biophysicists
- 023 Biological scientists (e.g., botanists, ecologists, zoologists)
- 024 Forestry and conservation scientists
- 025 Medical scientists (excluding practitioners)
- 026 Technologists & technicians in the biological/life sciences
- 027 OTHER biological/life scientists

### **Clerical/Administrative Support**

- 031 Accounting clerks, bookkeepers
- 032 Secretaries, receptionists, typists
- 033 OTHER administrative (e.g., record clerks, telephone operators)

## 040 **Clergy & Other Religious Workers**

### **Computer Occupations** (Also see 173)

- \*\*\* Computer engineers (See 087, 088 under Engineering)
- 051 Computer programmers (business, scientific, process control)
- 052 Computer system analysts
- 053 Computer scientists, except system analysts
- 054 Information systems scientists or analysts
- 055 OTHER computer, information science occupations

- \*\*\* **Consultants** (*Select the code that comes closest to your usual area of consulting*)

## 070 **Counselors, Educational & Vocational** (Also see 236)

### **Engineers, Architects, Surveyors**

- 081 Architects
- \*\*\* Engineers (Also see 100-103)
- 082 Aeronautical, aerospace, astronautical engineer
- 083 Agricultural engineer
- 084 Bioengineering & biomedical engineer
- 085 Chemical engineer
- 086 Civil, including architectural & sanitary engineer

### \*\*\* Engineers (continued)

- 087 Computer engineer - hardware
- 088 Computer engineer - software
- 089 Electrical, electronic engineer
- 090 Environmental engineer
- 091 Industrial engineer
- 092 Marine engineer or naval architect engineer
- 093 Materials or metallurgical engineer
- 094 Mechanical engineer
- 095 Mining or geological engineer
- 096 Nuclear engineer
- 097 Petroleum engineer
- 098 Sales engineer
- 099 Other engineer

### \*\*\* Engineering Technologists and Technicians

- 100 Electrical, electronic, industrial, mechanical
- 101 Drafting occupations, including computer drafting
- 102 Surveying and mapping
- 103 OTHER engineering technologists and technicians
- 104 Surveyors

## 110 **Farmers, Foresters & Fishermen**

### **Health Occupations**

- 111 Diagnosing/Treating Practitioners (e.g., dentists, optometrists, physicians, psychiatrists, podiatrists, surgeons, veterinarians)
- 112 Registered nurses, pharmacists, dieticians, therapists, physician assistants
- 236 Psychologists, including clinical
- 113 Health Technologists & Technicians (e.g., dental hygienists, health record technologist/technicians, licensed practical nurses, medical or laboratory technicians, radiologic technologists/technicians)
- 114 OTHER health occupations

## 120 **Lawyers, Judges**

## 130 **Librarians, Archivists, Curators**

### **Managers, Executives, Administrators** (Also see 151-153)

- 141 Top and mid-level managers, executives, administrators (people who manage other managers)
- \*\*\* All other managers, including the self-employed - *Select the code that comes closest to the field you manage*

# LIST B: JOB CODES LIST - Continued

## Management-Related Occupations (Also see 141)

- 151 Accountants, auditors, and other financial specialists
- 152 Personnel, training, and labor relations specialists
- 153 OTHER management related occupations

## Mathematical Scientists

- 171 Actuaries
- 172 Mathematicians
- 173 Operations research analysts, modelling
- 174 Statisticians
- 175 Technologists and technicians in the mathematical sciences
- 176 OTHER mathematical scientists

## Physical Scientists

- 191 Astronomers
- 192 Atmospheric and space scientists
- 193 Chemists, except biochemists
- 194 Geologists, including earth scientists
- 195 Oceanographers
- 196 Physicists
- 197 Technologists and technicians in the physical sciences
- 198 OTHER physical scientists

## \*\*\* Research Associates/Assistants

*(Select the code that comes closest to your field)*

## Sales and Marketing

- 200 Insurance, securities, real estate, & business services
- 201 Sales Occupations - Commodities Except Retail  
(e.g., industrial machinery/equipment/supplies, medical and dental equip/supplies)
- 202 Sales Occupations - Retail  
(e.g., furnishings, clothing, motor vehicles, cosmetics)
- 203 OTHER marketing and sales occupations

## Service Occupations, Except Health (Also see 111-114)

- 221 Food Preparation and Service (e.g., cooks, waitresses, bartenders)
- 222 Protective services (e.g., fire fighters, police, guards)
- 223 OTHER service occupations, except health

## Social Scientists

- 231 Anthropologists
- 232 Economists
- 233 Historians, science and technology
- 234 Historians, except science and technology
- 235 Political scientists
- 236 Psychologists, including clinical (Also see 070)
- 237 Sociologists
- 238 OTHER social scientist

## 240 Social Workers

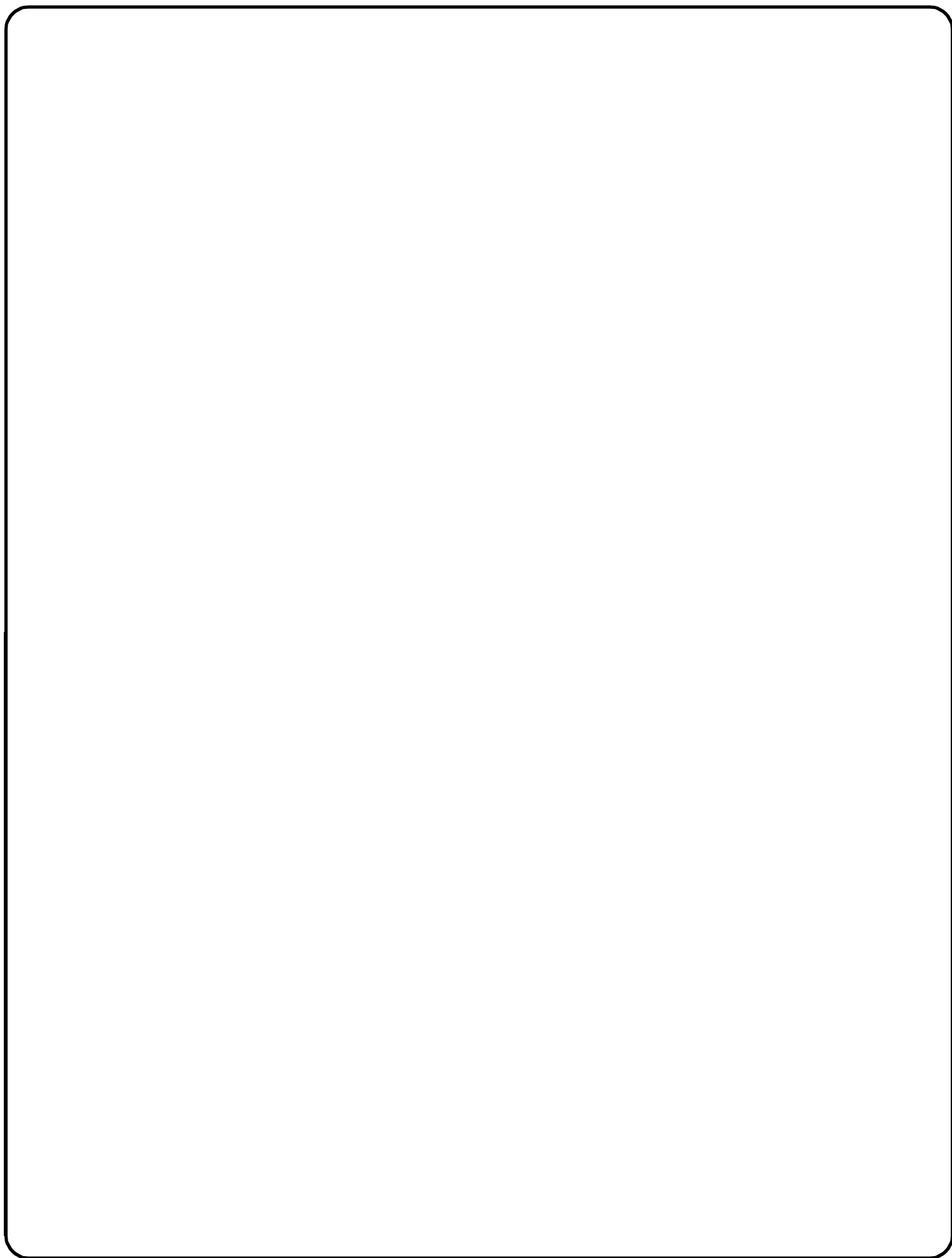
## Teachers/Professors

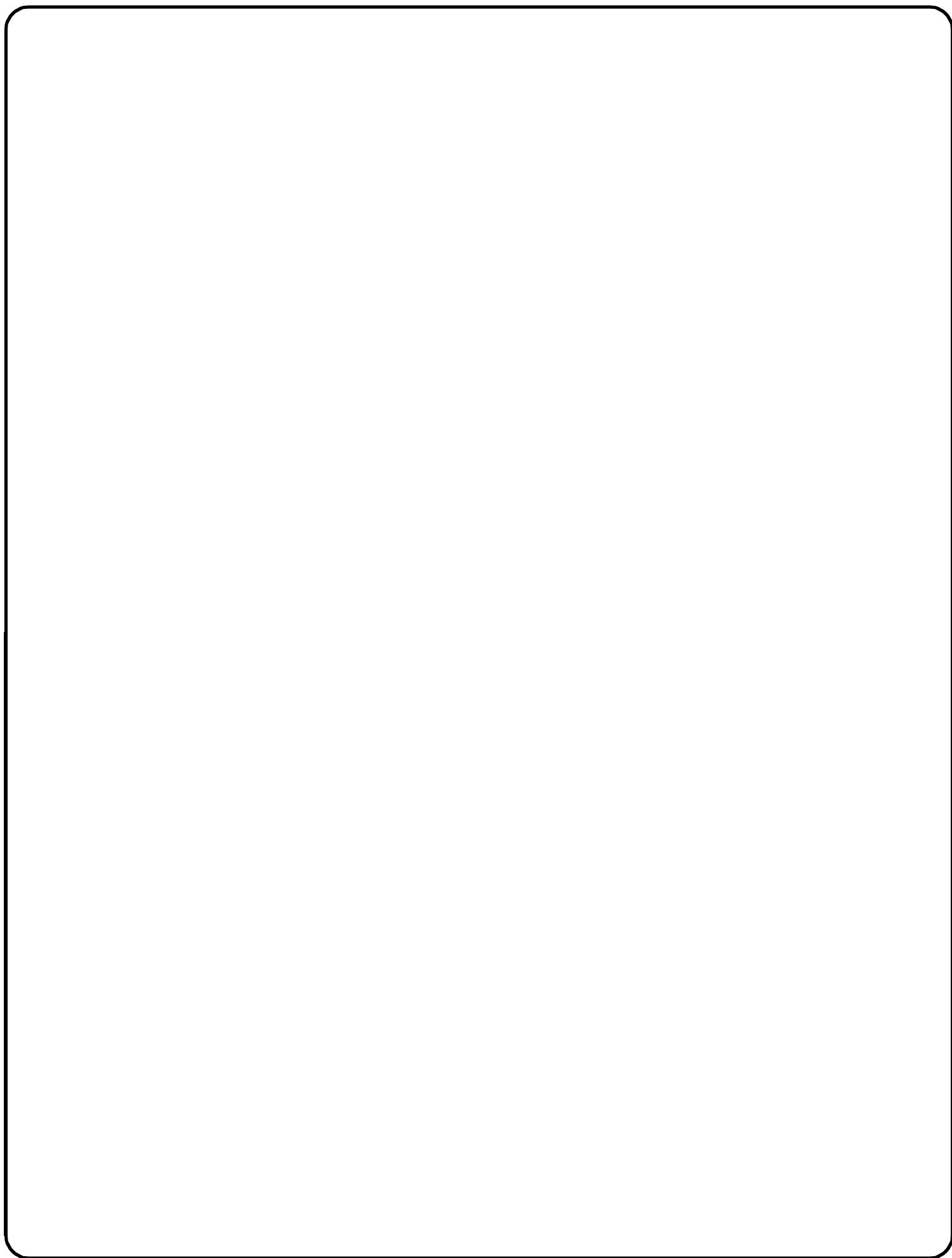
- 251 Pre-Kindergarten and kindergarten
- 252 Elementary
- 253 Secondary - computer, math, or sciences
- 254 Secondary - social sciences
- 255 Secondary - other subjects
- 256 Special education - primary and secondary
- 257 OTHER precollegiate area
- \*\*\* Postsecondary
- 271 Agriculture
- 272 Art, Drama, and Music
- 273 Biological Sciences
- 274 Business Commerce and Marketing
- 275 Chemistry
- 276 Computer Science
- 277 Earth, Environmental, and Marine Science
- 278 Economics
- 279 Education
- 280 Engineering
- 281 English
- 282 Foreign Language
- 283 History
- 284 Home Economics
- 285 Law
- 286 Mathematical Sciences
- 287 Medical Science
- 288 Physical Education
- 289 Physics
- 290 Political Science
- 291 Psychology
- 292 Social Work
- 293 Sociology
- 294 Theology
- 295 Trade and Industrial
- 296 OTHER health specialties
- 297 OTHER natural sciences
- 298 OTHER social sciences
- 299 OTHER Postsecondary

## Other Professions

- 401 Construction trades, miners & well drillers
- 402 Mechanics and repairers
- 403 Precision/production occupations  
(e.g., metal workers, woodworkers, butchers, bakers, printing occupations, tailors, shoemakers, photographic process)
- 404 Operators and related occupations  
(e.g., machine set-up, machine operators and tenders, fabricators, assemblers)
- 405 Transportation/material moving occupations

## 500 Other Occupations (Not Listed)

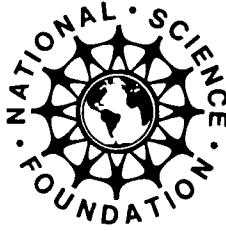




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